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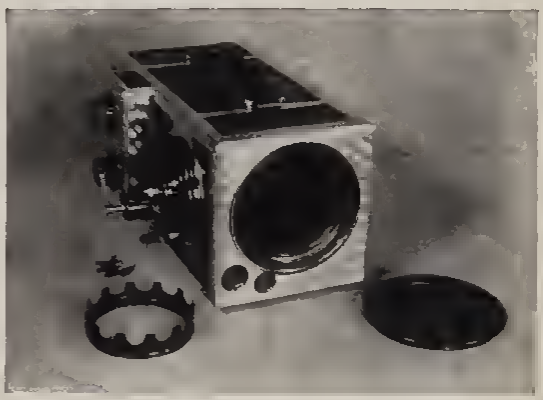

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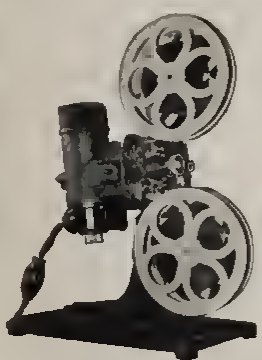

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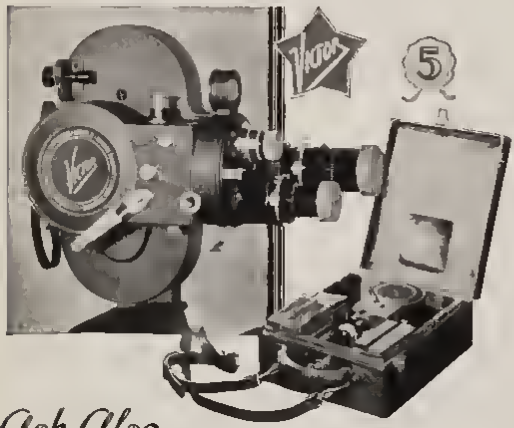

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CONTENTS

	Page
Personality and Pictorialism in Portraiture, by Ernest Bachrach	6
UFA, by Robert M Low	8
Photographic Emulsions, by Lewis W. Physioc	9
Small Sets, by Gordon Wiles	11
The Duplication of Motion Picture Negatives, by J I Crabtree and C H Schwingel	13
The Baker Process, by Wm Stull, A S C	14
Coordination, by Dr. L M Dieterich, A S C	15
Hal Hall Says	16
Du Pont's New Panchromatic Film, by Dr. V. B Sease	17
Concerning Cinematography, by Wm. Stull	20
Amateur Movie Making, by Wm Stull, A S C	30
The Elements of Make-up, by James Barker	32
Selecting Your Subjects, by Hal Hall	33
Morgana Color, by Wm Stull, A S C	34

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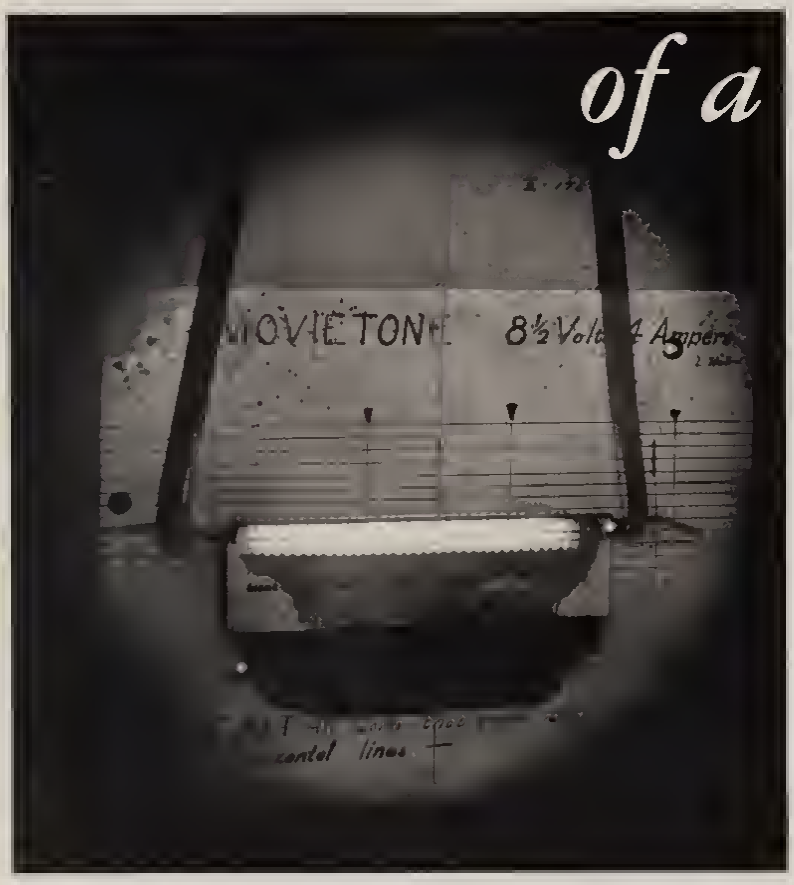

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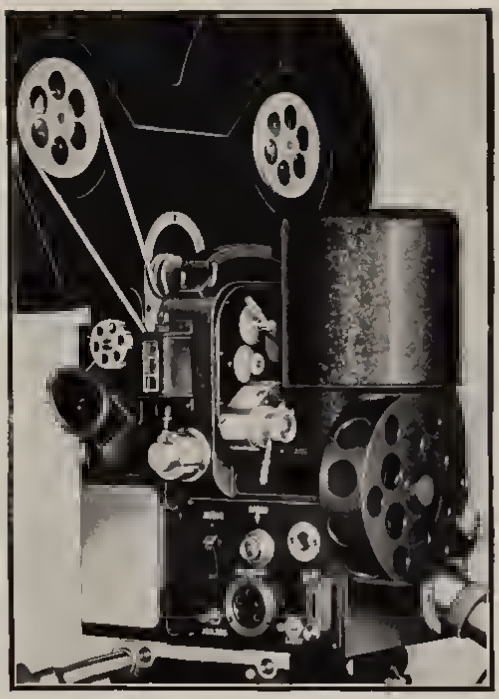

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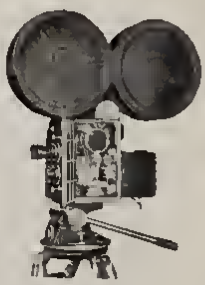

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Personality and Pictorialism in Portraiture

by **ERNEST BACHRACH**
Head of Still Department, R K O Studio

PORTRAIT photographers outside of the motion picture industry have for many years recognized the fact that a successful portrait is not merely a matter-of-fact photographic record of a person's face, but rather a primarily pictorial representation of that person's personality, made by means of photography. This school of thought has gained for photography a place among the recognized arts, and produced, in men like Edward Steichen, Nicholas Muray, Pirie MacDonald, Nicholas Haz, and their fellows, a group of unsurpassed artists.

In the modern picture industry, on the other hand, the emphasis has generally been on the more straightforward, commercial-record type of portrait. From all viewpoints, this is deplorable, and, to my mind, unnecessary. In the first place, the motion picture industry, from its very nature, demands portraits of the highest type—portraits which show not merely the appearance of the subject, but also the subject's personality. For this industry is essentially the sale of its stellar personalities to the public, not alone through the medium of the films exhibited in the theatres, but also by means of the portraits published in the myriad magazines and newspapers throughout the world. In the second place, the men who preside over the various portrait galleries maintained by the studios are, individually and collectively, portrait artists second to none—capable of producing far better work than the too-frequently indifferent sort of portraits that they are usually called upon to turn out. Letting such ability go virtually to waste is gross extravagance.

It must be admitted, of course, that the studio portrait photographer works under certain inherent limitations which do not, as a rule, apply to the independent portraitist. In the first place, all of his work is definitely intended for magazine and newspaper reproduction. In the second place, he must work on a volume-production basis unknown elsewhere, and under drastic time-limitations.

I have found, however, through experience, that neither of these inherent limitations is sufficient to restrict the determined worker.

Admittedly, the fact that studio portraits are intended primarily for publicity purposes—for reproduction in newspapers and magazines—is a problem. To my mind, however, the magnitude of this problem is greatly exaggerated. The photo-engraving and rotogravure processes have in recent years made tremendous strides, it is now possible to get very satisfactory results even when relatively coarse screens and ordinary papers are used—provided a reasonable amount of skill and care are exercised in the engraving and printing processes. Furthermore, I have observed that the journals taking such care in the making and printing of their reproductions are almost invariably the ones which publicity men regard as the most valuable publicity media, and this is by no means restricted to the "class" publications. I have further observed that, the better the portrait, the better the position accorded to it by the editors, in a majority of instances, both magazines and newspapers maintain special sections or, in some cases, special editions—with superior reproduction, make-

The strong lighting in this portrait of Gwili Andre reveals her dramatic possibilities.

The lighting of this portrait of Dolores del Rio makes the simple composition interesting

up and copy—for the most desirable art Lastly, I have also observed that, the better the picture—the more original and distinctive it is—the more favorable is its response from the editors.

This last is logical enough for regardless of whether the acceptance and placing of photographs is handled by a trained art-editor or by an editor who, like many laymen, feels that he 'may know nothing about art, but does know what he likes''—or what the public likes—he is almost certain to have sufficient journalistic acumen to realize that, the more he avoids the commonplace, the more attractive will his issue be And if he fills his pages with commonplace, run-of-the-mill pictures, he cannot escape a commonplace, run-of-the mill-looking magazine

In so far as the mass-production factor is concerned, it really need not limit the photographer seriously Quite the reverse! In almost anything, if one is able to work too deliberately, his work suffers A director, for instance, will under such circumstances, often tend to become too "clever," a writer, too verbose; an actor, too "actorish," and a photographer too "arty" In my own case, I have found that if I have the time to play with my portraits they lose their spontaneity, the poses become too studied, the lightings, too "tricky" On the other hand, of course, excessive pressure must inevitably result in the slighting of many details—the stifling of the creative spark But a happy medium is entirely possible

But perhaps the best presentation of my theories would be a brief description of my methods of working In this connection, let me apologize for the rather excessive use of the personal pronoun, after all, it seems in this instance an inescapable evil, for such an article as this is can only be a presentation of one man's personal opinions and experiences I would err irreparably if I were to set forth my own views as anything else No individual can lay down general laws in a personal discussion of an artistic problem

The first consideration, of course, must naturally be the nature of the portrait in question whether it is to be an advance-study of some specific characterization to be used in a production, or purely a portrait to keep the player and his personality before the public In the former case, of course, I must know, naturally, something of the part itself and of the player's conception thereof Then it becomes a relatively simple matter to determine the treatment that will best serve our purpose

In the more frequent instances, of course where the portrait is intended to be simply a portrait, the problem is at times more difficult If the player is one who has been under contract to the studio for some time, I am at once working both at an advantage and at a disadvantage, I know the player, having made perhaps hundreds of other pictures of him before—but I must carefully avoid duplicating the many previous portraits I have already made of him If the player is a newcomer to the studio—and especially if he (or she) is new to pictures, I must take great care to have my portraits coincide with the personality that the studio—through casting, makeup and costuming—hopes to build up for their new luminary I must make my camera see the newcomer's personality as the public will discover it on the screen, many months hence It would not do at all for me to make these first portraits of a newcomer as, for instance, a sweet young ingenue, when the parts selected for her first appearance were to present her as a sophisticated woman of the world

As a rule, I have found it highly advantageous to know my sitters relatively well It is a common misconception that screen stars are inevitably easy subjects for the portrait artist Such is not by any means the case Even in their daily work on the set, some stars are uncomfortably camera-conscious, and even the ones who are least so on the set often become painfully self-conscious and camera-shy in the portrait gallery A classic example, of course, was recently cited by Edward Steichen, in an article in a national magazine, when he stated

(Continued on page 28)

Natwithstending the delicate gredetians, this partrait af Gwili Andre repraduces perfectly.

The simple, virile lighting af this portrait perfectly expresses the cheracter af Richard Dix.

UFA

by **ROBERT M. LOW**

WHEN we think of the German Cinema, our thoughts almost involuntarily shape themselves into the three letters U F A. For the initials of the Universum Film Aktiengesellschaft represent more than the mere name of a firm; they stand for the Film Industry of a great country. True, there are in Germany other production firms than Ufa, but in the truest sense of the word, Ufa is the German Film Industry and the German Film Industry is Ufa.

Undoubtedly the most marked of the many differences between the German Film Industry and its American contemporary is the tremendous esprit de corps prevailing throughout the former. Everyone connected with the business is proud of his connection. More than that, he is proud of his company. Everyone is working whole-heartedly for the good of the company, studio politics are unknown. The work itself is the important thing, not the pay-check (which is, by the way, much smaller than it would be for a corresponding position in this country.)

When a production is finally completed, and opens at some theatre in Berlin, every member of the company is present at the premiere, rejoicing at the fact that he himself has had some part in making the picture. If the picture is a hit, everyone concerned feels a glow of pride, not alone because he helped make the picture, but because it is a success for his studio. This company pride is not by any means confined to the executives and those few fortunate ones who, like the director, cameraman and star, find their names in electric lights in front of the theatre, but spreads throughout the entire studio force.

Much of this may undoubtedly be attributed to the different conception of the cinema in the minds of all German film workers, it is not a get-rich quick 'game' or a 'racket', it is an art. As such it dignifies everyone connected with it. It demands the utmost in application and intelligence, in it accomplishment is enormously worth while for its own sake.

In consequence, working conditions in the German Film Industry are far better than they are here. Of course, the studios are not as luxurious, nor are the resources so great. I remember, for instance, that we used to go on a strike regularly once a week in protest at what the studio cafe used to serve us as food. Neither quarters nor salaries are so large as they are here, but the real essential—the atmosphere of the industry—is far more conducive to creative work. One does not have to keep one eye constantly open, one hand constantly on guard, against figurative back-stabbing. Competition is keen—but it is based on actual merit rather than studio politics. **You know that if you have a job it is because you are the best man for the place; you are not there merely because you are somebody's friend.**

Production schedules are decidedly longer than they are here. There is no frantic, heartbreaking driving to meet an impossibly close release-date. (This despite a serious shortage of pictures.)

In Germany, the preparation of a picture is decidedly more important than it is here. The story is carefully chosen, and once it is chosen, its preparation is by far a more cooperative affair than would be the case here. It is not merely a matter for the writers and the producer, but for the director and cinematographer as well, in some instances, the recordist and the musical-director are also consulted. In my own experience working on the English version of "Congress Dances," those of us who were assisting in the production of the English and French versions also aided the preparations, and participated in the many conferences between Producer Erich Pommer, Director Edik Charell, Cinematographer Karl Hoffmann, Recordist Fritz Thiery, and the writers, Norman Falk, Robert Liebmann and Robert Leigh. Richard Heyman, the composer of the music, naturally participated in many of these conferences, as did the Art Directors, Robert Herlth and Walther Rohrig, the Costumer, Ernst Stern, and Carl Winston (now here with Paramount), Mr. Pommer's assistant. But the brunt of the preparatory work was done by Pommer, Charell, and Hoffmann.

Let me here pay tribute to that superb genius, Erich Pommer. He is, literally, Ufa. He is the guiding spirit of the studio, a man with whom it is an inspiration to work. He is an entirely different type of executive from the average supervisor found in this country, the type which some of our executives over here might be if they were not burdened with the impossible task of doing the work of three or four men in guiding the enormous production of a big studio. Pommer is an executive who intimately understands the work of every man under him. He knows writing, direction, cinematography, cutting, and every phase of production from personal experience. **He aids his subordinates rather than hinders them.** But his record as a producer can speak far more eloquently than anything else: literally every great German picture for the last fourteen years has been an Erich Pommer production—From "The Cabinet of Dr. Caligari" to "Congress Dances."

Pommer's intimate knowledge of all phases of production is not, however, unique. Everyone occupying an important position with Ufa is expected to know both his business—and the other fellow's. Directors, writers and cinematographers especially are required to be familiar with all of the technical and artistic phases of the work. In Germany there are no "Directors" suddenly transplanted from the cloak-and-suit business, no writers called in from the newspapers. If you are to work in the creative side of German pictures, you must know ever detail of both the Art and Technique of your medium. You do not attain your position overnight—but when you do, you really know your business. In my own case, for instance, before I was allowed to serve even as an assistant in the direction of pictures, I was given the opportunity to study every phase of the business; I worked in the laboratory, the camera department, the sound department, and the cutting-room just as a student goes through a prescribed course before receiving a college degree.

In Germany, too, the Cinematographer is regarded as an artist exactly equal with the director. His opinion counts for as much in the preparation of the script, the shooting of the picture, and he is as frequently consulted during the cutting. He is generally called into consultation long before the actual start of a production, and remains with it until it is well into the cutting. His name is deemed worthy of equal screen-credit with that of the director, and is frequently placed in electric lights outside the theatre.

In the Ufa studio there is nothing corresponding with the camera department of an American studio. Pommer knows all of the cameramen personally, and engages them for his productions exactly as he does his directors.

On the set, of course, the cinematographer works in much the same fashion that his fellows in America do. He has his crew of second and assistant cinematographers and, of course, his electricians. The First Cinematographer, just as is customary here, never touches his camera himself, but directs the photography and lighting.

In the actual production, however, there is one great difference from American practice. The exhaustive preparation

(Continued on page 23)

Photographic Emulsions

by **LEWIS W. PHYSIOC**

THOSE who are engaged in pursuits directly connected with the art of photography probably know that there is an interesting history represented in the development of this beautiful combination of art and science When we compare our modern processes with the early experiments, our idea of mere history is enlivened by the elements of a thrilling romance In fact, when we begin to study the various stages of development we see them unfold like the acts of a drama, reaching its climax in the most recent achievements

For the benefit of those who have not the time to search through the many volumes devoted to the subject, it has been suggested that some of the salient features of this development be set forth in brief, chronological order

The Camera Obscura

Although apparently known for a long time before, it was not until 1569 that the camera obscura was put to a practical use, when Baptista Porta devised a toy, later improved by Guyot, that was used for tracing natural landscapes and views to be reproduced The various designs embodied the simple principle of passing rays of light into the darkened chamber through a pinhole aperture W H Wollaston, in 1812, found that by using a single, meniscus lens in lieu of the pinhole, the image was rendered more brilliant and well defined and after numerous developments of this principle the two Chevaliers of Paris made, in 1840, the first real photographic objective It is interesting to contemplate that our most modern apparatus is merely an elaboration of this anciently observed phenomenon

Early Chemical Experiments

With the chemical department, as with the camera obscura, we may revert to the ancient students, for as soon as men were capable of rational speculations they observed the effect of light upon various substances A shield removed from a panoply after a long term of peace had left its outline upon the wall The bleaching of hides was observed in very remote times The early painters were well acquainted with the action of light upon various pigments.

The first important advance in this respect occurred when W. K Sheele discovered that silver chloride became darkened by the action of sunlight His experiments were interesting for three very significant reasons In exposing the chloride under water he discovered that, as decomposition took place, a soluble compound was formed, and that by adding silver nitrate new silver chloride was precipitated. This was the first hint of the principles involved in the manufacture of an emulsion Then, by adding ammonia to the darkened chloride the insoluble metallic silver was left behind, a palpable suggestion of the developing process Also, he noticed that the violet element of light acted more powerfully on the silver chloride, a condition that has placed a limit on the results of photography through many phases of its development.

From the time of Sheele's discoveries other experiments followed with an enthusiasm that reminds us of those who are working over a puzzle and are close upon the heels of the key, producing silhouette prints of various objects, reproducing the symmetrical outlines and delicate tracery of the venal structure of leaves, etc

But unfortunately, the same light that made them destroyed them, and they could be viewed only for a short time We can appreciate the disappointment expressed by one of those experimenters when he said "nothing but a method of preventing the unshaded parts of the delineations from being colored, today, is wanting to render this process as useful as it is elegant"

Fixing The Camera Image

After considering these experiments, it may readily be seen that the paramount idea was to fix the camera image The first record of any sort of success is accorded a young Frenchman, Nicephore de Niepce He strayed a little from the efforts of his brother workers, and combined some mechanics with his chemistry He found that asphaltum was also subject to the action of light, but in a somewhat different manner. He covered a metal plate with a solution of asphaltum and oil of lavender, and exposed it for several hours in the camera obscura The parts exposed to the light became insoluble, and the unlighted portions were dissolved away with a solution of oil of lavender and petroleum The metal could then be etched, and the picture so obtained was probably the first example of photoengraving There is nothing that might furnish a more interesting comparison between those experiments and our modern developments than Niepce's statement that it required from seven to eight hours to expose a landscape in open light

The Daguerreotype

Coincidental with Niepce's operations, there was a scene painter who likewise was obsessed with the idea of fixing the photographic image He was a good scenic artist; nevertheless he was not satisfied with his own efforts Scene painters have ever been men who liked to look around His interest in photographic processes was so great that he neglected his painting, and his good wife became concerned about his mental condition In 1829 he entered into a partnership with Niepce Let us pause here to consider the earnestness of a man so set upon a project as to acknowlegde his limitations in prosecuting his designs and to call upon his competitor for help Such a man seldom fails, for he is more interested in the actual achievement than in the glory attendant upon great accomplishments

They plodded along together, not greatly improving their "heliography" They dipped in different chemicals and tried various metals for their plates—tin, copper, glass, and finally, they knew not why, polished silver. There was a peculiar persistence about this idea of silver Some say it was Niepce's idea, others that Daguerre insisted upon it But the real truth had not dawned upon them They were discouraged

Finally Daguerre recalled some of the experiments of the earlier workers They had shown that silver combined with iodine was sensitive to light, and he was convinced that Niepce's slow asphaltum should give place to the iodized silver plate They tried it, but the images were so faint as to be useless He and Niepce disputed, but soon Niepce died and his son carried on with the fanatical artist until accident solved the problem The solution of the problem seems to have come about through the spilling of a bottle of mercury

It is common knowledge that it is in the nature of some chemicals to give off fumes and of others to be greedy to combine with those fumes So, when Daguerre returned to his investigations, he found that one of his old discarded plates had been acted upon by the fumes of mercury, and that each little particle of the faint silver image had become coated with condensed mercury Daguerre discovered, to his joy and surprise, a well-defined delineation instead of the discarded failure Here was another detail introduced into the foundation of the future structure of photography—a hint of the ultimate process of developing the "latent image"

The next development in the "fixing of the image" was introduced by another artist, Fox Talbot a contemporary of Daguerre He was out sketching, tracing a view from Woll-

aston's simple little camera obscura, and he, too, was inspired with the idea of capturing the fleeting image

Talbot's experiments were important in having pointed off another period in photographic history He substituted the paper support for the metal and the glass plates and raised the peg another notch in the scale of sensitivity, for, as he said, ' Subjects such as white sails in full sunlight may be obtained in half a second," a great advance over Niepce's eight-hour exposure

In the adoption of the paper support we also recognize the forerunner of our modern printing process

Hypo: (Sodium Thiosulfate or Hyposulfite)

In the discovery of the use of "hypo" our romance is given a dramatic mood When we review the experiments already described we recognize one serious embarrassment After having succeeded in fixing the camera image, the next difficulty was to make the reproductions permanent, "to make them as useful as they were elegant "

The requirement was a solvent, strong enough to dissolve the unlighted (or unchanged) silver salts, but not powerful enough to remove the metallic silver. The search was long and tedious, because of the distinction between a physical solvent and a chemical reagent, and most solvents are powerful reagents. Various solvents were employed but were found unsatisfactory Ammonia was tried, but this required a very strong solution which affected parts that needed protection, cyanide of potassium nearly met the requirements, but was extremely poisonous and expensive

It has been recorded that Francois Chaussier as early as 1799 discovered the salt. Sir John Herschel, in 1819, was probably the first to discover that hypo could dissolve the unreduced silver salts without attacking the metallic silver. However, it was not until 1837 that J B Reade used it in photography

The remarkable feature of this hypo is the fact that from the time it was first used, and through its many stages of development, its position as one of the most important elements in the art has been unassailed by the most modern developments We may be thankful that industrial chemistry and nature's stores have supplied us so bountifully with hypo Its present price also furnishes an interesting comparison with that in the time of Reade, when it cost "half a crown an ounce "

The Wet Plate

Despite the popularity of the daguerreotype, photographic enthusiasts strove for something better. They were probably spurred on by the agony of the victim who sat for a portrait, with body and head rigidly set in a brace, and whose face was covered with white powder make-up to reduce the lengthy exposure Another item to be considered was the cost The silver plates were expensive It seems ridiculous when we consider how much more silver than was necessary was contained in one of those plates Another undesirable feature was the limitation to a single picture The natural induction, then, was to secure a negative from which could be produced many positives In this conception lay the real germ of modern photography

Paper negatives were tried, and were subsequently improved by waxing and soaking them in oil, to render them more translucent Glass was the ideal support, but it involved new difficulties and demanded further experiments It was necessary to find something that would adhere to the glass and would, at the same time, hold in suspension the sensitive silver salts. Albumen, starch, and serum of milk were tried, which for a while furnished a little hope.

Finally, Le Gray suggested collodion, a mixture of pyroxaline, alcohol, and ether F. Scott Archer accepted the suggestion, and in 1848 announced the first real photographic emulsion This marks an important period and involves several features The virtue of the collodion is its nature to support the silver compound and yet not suffer from the effects of the silver nitrate necessary to form those compounds

The collodion emulsion had one disadvantage, which led to the name "wet plate." Although the collodion held the silver salts, it entered into no compound with them and, when allowed to dry, the salts crystallized and destroyed the fabric and transparency It was necessary to expose it wet After development, the unexposed salts were then removed and the plate allowed to dry without the crystallization

The use of iodide of silver was another feature With the exception of Daguerre, other workers had used the chloride which blackened directly in the light The iodide, except under specific treatment, gave no visual effect of light Daguerre's mercuric accident probably suggested the development process. The most important feature, however, was the marked increase of sensitivity over that obtained previously, and there were introduced a quality and a practicability that startled even the most enthusiastic students The wet plate combined such features as a fineness of grain that has never been excelled, crystalline transparency and brilliancy, and a broad range of values Even at the present time, process workers in the publishing business use this method when excellence of reproduction is required

While the sensitivity was low, compared to the modern dry plate, it was a great improvement over the Daguerre and Talbot processes, as the average exposure required was only ten to fifteen seconds

The Dry Plate

Even the beauty of the wet plate could not long compensate for the tedious method of preparation and the inability to reproduce anything but still objects In attempts to improve the process, it was observed that the soluble bromide salt entered into a finer solution with collodion and instead of floating the silver nitrate over the plate it could be introduced into the collodion solution drop by drop, forming an emulsified combination that could be spread on the plate, and that after washing out the solubles it could be allowed to dry This is the first idea of what is properly termed the photographic emulsion

The success of the collodion process naturally stimulated the search for other mediums for the suspension of the silver salts Gelatin was selected as a substitute Among the many experimentalists, Dr R L Maddox is credited as being the first to produce really fine results

The gelatin emulsion ushered in a period of extensive commercial developments, which continually demanded an increase of sensitivity This sensitivity—or reduction of the time of exposure—influenced photography both as a profession and a pastime The peculiar character of the gelatin emulsion is the remarkable combination it forms with the insoluble silver salts The nature of this combination has been one of the most intriguing features of the art. But the important consideration is the speed We have been shown that bromide and chloride of silver each has its individual maximum of sensitivity; the next discovery was that, when used together with gelatin under varying temperatures and under the so-called ripening and cooking treatment, there was formed a combination that created a tremendous increase in sensitivity

The commercial stimulus resulting from the introduction of the dry plate was represented in a convenient product that could be placed into the hands of millions of enthusiasts, snapshot exposures, the fascination and mystery of the latent image, the magic of development, and we may include as a historic period in the evolution, the adoption of celluloid as the base, which made possible the advent of motion pictures

Panchromatic Emulsion

Ever since the experiments of Johann Wilhelm Ritter, in 1801, when he discovered that the violet and ultra-violet rays were apparently the more active agents in photography,

(Continued on page 44)

Small Sets

Maximum Production Value With Minimum Cost

by **GORDON WILES**
Art Director, Fox Studio

WHEN the movies became "big business," they proceeded to lose one of their greatest assets, the ingenuity of the technicians. Most of us can remember the time, not so far distant, when Art Directors and Cinematographers were constantly faced with the problem of making a very small expenditure of money show big returns in production value on the screen. We got our effects, perforce, more through suggestion than through direct exhibition. If we wanted to show a Grand Hotel or an Empire State building, we could not actually build it—so we learned how to use the magic of the camera to suggest it. Nine times out of ten, we succeeded. Of recent years, however, when forced with the same story requirements, we simply have taken the easiest way; spent a little more money, and actually built whatever we needed, whether it be a massive hotel-lobby (needed for two scenes) or a battleship. One of my friends, in discussing this aspect of production, recently drew upon his experience with one of the major companies, and told of an elaborate night-club set which was constructed solely for use as a background for a single scene which showed the star leaving the night-club. As it reached the screen, the scene was shot from within the night-club, looking out at the street. It lasted for but a few seconds on the screen. Yet—the complete night-club (inside and out) had been built, furnished, and dressed with people and an orchestra. The set alone cost many thousand dollars, while the furniture, players, electric current, lighting-equipment, and personnel (not to mention the technical crew and the time element) ran the cost up to an appalling figure. And all for one scene which could have been done with a door, a backing, and a dozen extras! Is there any wonder that production costs have skyrocketed to an impossible height?

As a consequence, the cry throughout the industry today is for lowered costs. But this economy must be effected without any loss in production value. No individual or department can hope to achieve this result, single handed, with earnest, whole-hearted and intelligent cooperation between all concerned—producer, writer, scenarist, art-director, director and cinematographer—not only may this desideratum be attained, but the quality and cleverness of our films materially increased. I am convinced that if proper care and ingenuity are exercised in the design of sets, every department will inevitably benefit. First of all, of course, production costs would be lowered. More important, we could have better scripts, better preparation, less dialogue, fewer loopholes for extravagant "protection-shots," far less overshooting, and (best of all) double the production value on the screen with only a small fraction of the cost. In a word, we would once more be making real motion pictures, of the sort that built up the industry.

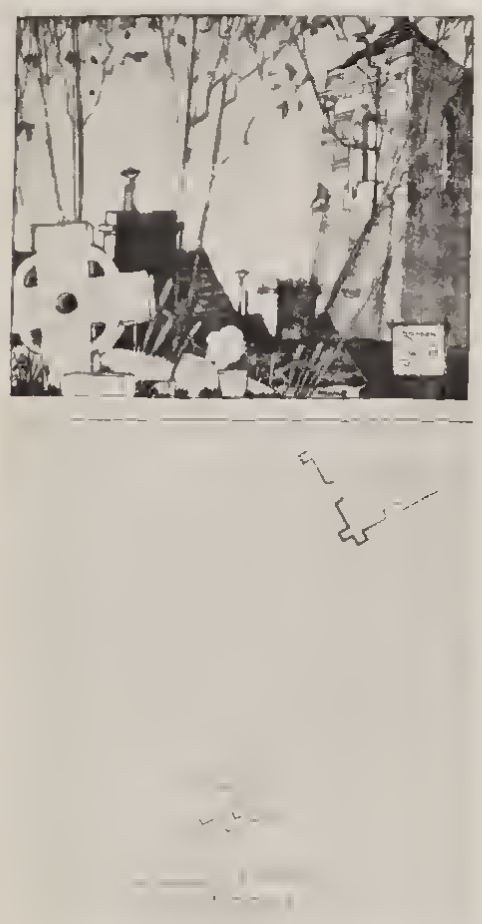
Personally, I do not consider this to be in any way "cheating." After all, the only thing that brings in a return is what actually reaches the screen. Here at the Fox Studio, we have a slogan, "What does it mean at the Box Office?" The watchword of the production departments—especially the art and photographic departments—should be "How will it show up on the screen?" If we build a big set to give a picture production value, we should take care, first, that it is actually necessary to a production, and secondly, that it actually reaches the screen intact. If it does not comply with these two qualifications, it is an extravagance.

To my mind, the important thing is not the actual appearance of a set in itself, but its ultimate appearance on the screen. If, by application of the laws of design, perspective, and cinematography we can give the impression of a big set through some less costly expedient, why should we not do so? We are keeping faith with the public, certainly, for we are giving them a luxurious set in so far as the camera shows it. We are keeping faith with our employers, for we are saving them money. And we are keeping faith with our own artistic ideals, for we are at once utilizing our artistic and technical ability to the full, and enabling our story to be told with the greatest effect.

Applying the laws of perspective and design makes this inexpensive set pay big returns in production value.

At this point, concrete illustration must be called upon to prove or disprove this abstract theorizing. Fortunately, I am at present working on a production with exactly this thought in mind. The picture is "Rackety Rax," a satire on gangsters. In it, a super "big-shot" of the "little Napoleon" type gains control of a chain of rackets—dog-races, horse-races, and finally college football. It is a story ideally suited to screen treatment, for a great deal can be told visually. I have had this thought in mind in designing the sets, fortunately, too, I have enjoyed unusual cooperation from both the scenarist and the director. As a result, I have been able to put their theories into actual practice. Not only have we been able

to tell a great part of our story visually, by means of the action and the sets themselves, but we are saving money without the least sacrifice of production value Every shot —every camera-set-up—has been carefully prepared so that it will give the maximum effect on the screen I do not believe that the cost of any single set in the picture will exceed $700—some of them will cost less than $300—yet with these sets, averaging, say, $500 apiece, we are getting the same production value of sets which, if handled normally, would cost at least $2500 00 each



Here the use of a foreground miniature adds to the pictorial effect, and permits the use of a small, inexpensive set

In one sequence, for instance, we want to establish that this racketeer is not only a racketeer, but "the big fellow" According to the script, he lives in a luxurious hotel which he owns, and has staffed with his yeggmen Accordingly, we introduce him entering the hotel Such a set can be extremely expensive—and yet fail to tell the story, or register in a manner commensurate with its cost Our set is simple, at the rear of the revolving door of the hotel, with the street behind shown by the projection process The floor is an elaborate marble design To the left is a circular desk To the right, in the middle-distance a flat representing a long row of elevators, only the first of these elevator-doors is actually needed, accordingly, the rest are but dummies In the right foreground is the bellhops bench Upon this bench we have a row of these gangster-bellhops Through their dialog we establish the fact that the "big fellow" owns the hotel, and controls the sports rackets Suddenly they spring to attention, the camera pans left to the door as the 'big shot" enters and walks over to the elevators, and exits Thus in one scene, with two logical movements of the camera, we have made a $500 set tell part of our story, established an important character, and give the production value that might otherwise have necessitated a $5000 00 set

In the gang chief's office we again use the set to establish the man's characterization. One simple flat—a wall, with big portraits of Foch, Haig, Pershing, and Diaz, in uniform, hung upon it In the centre is an equally large portrait of the gang leader, in a top-sergeant's uniform Beneath runs a low bench, seated upon this bench are half a dozen of the gangster's henchmen The gang chief passes, going to his office In one scene, with one simple set we have established his "little Napoleon" complex—at a trifling cost In the office itself we similarly establish the fact that he has raised racketeering to the heights of 'big business" The back wall is covered with a map of his territory, with pins, as in a war-map, indicating strategic points—speakeasies, gambling-dives, etc Beneath the map are large graphs, indicating the progress of his interests—speakeasies, gambling, dog racing, football, etc In front of this is his desk—exaggeratedly large and low In the foreground is the big double-door of the office The scene opens with the doors closed The chief enters, and the camera s angle just clears the door-sills, and shows the room, whose size is merely suggested Again, we tell our story with a set, at so trifling a cost that the set need not be saved for use in other productions

In another sequence, we want to establish another character an attorney, a gentleman In a similar manner, we suggest his office rather than show it The action characterizes the man—and we play it in a single long-shot Again, a saving Again, we bring big production-value to the screen with little cost

Such treatment, of course demands far more careful preparation and production The director and art director must work on the script with the scenarist, it would be well if the cinematographer could also do so We must plan every set-up We must know exactly what effects we will get with a given lens and viewpoint We must foresee everything, and so synchronize our set and our script that there will be no need of reverse-angle "protection shots," no chance of wasting our sets by using closeups where they are not needed, nor, on the other hand, using long-shots where close-ups would tell the story as well, or better

On 'Rackety Rax" we have been fortunate in securing perfect cooperation The scenarist has welcomed this cooperation, and between us we have turned out a script that is truly a motion picture on paper—not merely a skeleton outline adapted from a short-story Dialog has been cut to the minimum, and as much as possible gotten over visually rather than verbally The director Al Werker, has been thoroughly in accord with these views I am confident that he will direct the picture in a manner that will make the most out of the material we have supplied him He, on his part, is confident that this type of coordinated script and sets will make his task vastly easier, and enable him to turn out a more effective production, more efficiently And as for the cinematographer, even though he has not been assigned as yet, I am confident that he, whoever he is, will quickly grasp the possibilities of such treatment I have talked with most of the cinematographers on the lot, and all are enthusiastic over its possibilities

It can be seen that such treatment as I have outlined for this production must inevitably involve more time in prepara-

(Continued on page 28)

The Duplication of Motion Picture Negatives

by **J. I. CRABTREE** and **C. H. SCHWINGEL**
Communication No. 488 from the Kodak Research Laboratories

This is the third and concluding installment of this valuable article. July and August issues containing the first two installments are available.—The Editor

VIII. SUMMARY

1. As a result of tests with a large number of combinations of emulsions, the best duplicate negatives, with respect to both tone reproduction and graininess were obtained with Eastman Duplicating Positive film emulsion series 1355 and Eastman Duplicating Negative film emulsion series 1505.

2. In order to maintain the graininess at a minimum, it was necessary to develop the duplicate negative to a low gamma (0.55) and the master positive to a correspondingly high gamma (1.85). Since the graininess of a positive image of given density increases with increase of density of the negative from which it is printed, it is necessary to maintain the minimum density of both the master positive and duplicate negative as low as is consistent with good tone reproduction.

3. It has been found that the graininess-gamma curve of the negative emulsion 1505 is straight and rather steep, but that of the duplicating positive emulsion 1355 has a long shoulder which runs almost parallel to the gamma axis. This explains why it is desirable to develop the master positive to a relatively high gamma so as to insure a low gamma, and therefore, minimum graininess for the duplicate negative. Although increasing the gamma of the master positive to a value greater than 1.85 would result in slightly improved graininess, the latitude of this material is diminished so that with fairly contrasty negatives it is not possible to obtain perfect tone reproduction.

4. A fine grain borax type of developer was found to be most suitable for the development of the duplicate negatives, while any good positive developer was satisfactory for the development of the master positives. The low degree of development required for the duplicate negative tended to introduce certain development defects which were at a minimum in the case of duplicating negative film, emulsion series 1505.

5. Poor contact between the negative and positive during printing improved the graininess but this was accomplished at the expense of loss in picture definition. The use of diffuse light for the printing caused a slight loss in picture definition without an apparent effect on graininess.

6. Duplicating Positive film, emulsion series 1355, has great latitude so that when the master positive was printed on this material and developed to a gamma of 1.85 and the duplicate negative printed on duplicating negative film (emulsion series 1505) and developed to a gamma of 0.55, a practically perfect reproduction of the tones of the original negative was secured. It was necessary, however, to print the minimum densities of the master positive at a density of at least 0.40* and of the duplicate negative at a density of at least 0.3 to avoid distortion due to the use of the underexposed regions of the materials.

7. Prints from duplicate negatives of sound records were practically indistinguishable, by listening tests, from the original prints, although tests with frequency records indicated an increase in ground noise and some losses at the frequencies of 5000 and above.

* This value is that of the actual silver deposit. To obtain the total film density the support density of 0.18 must be added to it.

IX. PRACTICAL INSTRUCTIONS FOR MAKING DUPLICATE NEGATIVES

Duplicate motion picture negatives may be made in the usual way without departing from ordinary methods of exposure and development. The quality of these duplicates will be better than could be obtained on other existing emulsions using similar technic.

A. The Master Positive

The master positive should be made on Eastman Duplicating positive film, emulsion series 1355. The speed of this material is approximately the same as that of ordinary motion picture positive film. A lavender support serves the purpose of reducing halation effects and also for identification. The emulsion is capable of giving very fine grained images with good contrast on full development. Its latitude is such as to insure correct reproduction for the greatest range of tones likely to be met with in an original negative. Also, it has the ability to reproduce the detail registered on the original.

B. Printing the Master Positive

When printing the master positive the first requirement is that sufficient exposure must be given so that all the tones and fine detail of the original are recorded faithfully. **A good master positive appears denser than the average projection positive, and to the inexperienced eye seems to be overprinted.** The least dense portions ("catch-lights") of any master positive should have a measurable density; a graying-over of the highlight areas, otherwise the reproduction of tones in the final print will be unsatisfactory, giving the print a "duped" appearance. Timing of the master positive should be for the highlights, allowing the shadows to take care of themselves. It must be remembered that the lavender support contributes to the density values, and an allowance must be made for this when judging exposure.

C. Development of the Master Positive

The master positive should be developed in any good positive film developer such as formula D-16. Developers of the borax type (D-76) are not capable of giving sufficient contrast.

The degree of development must be such that the contrast of the master positive is equal to or greater than that of a normal exhibition print (gamma approximately 1.8 for average good quality originals). This high contrast of the master positive permits the desired low degree of development of the duplicate negative which insures a minimum graininess of the image in the exhibition print.

Using rack and tank methods, with fresh motion picture D-16 developer at a temperature of 65° F., the development time for the master positive will be from 9 to 11 minutes depending upon the manipulation technic. With continuous machines the time of development differs widely with their design.

The fixing, washing, and drying processes for master positives are identical with those employed for motion picture positive films.

(Continued on page 23)

The Baker Process

by **WM. STULL, A.S.C.**

A NEW method of process photography, unusually adapted to the requirements of commercial production, has just been announced by Friend W. Baker, who is well known as one of the pioneers of process cinematography. The new process embodies the results of Mr. Baker's seventeen years in the cinematographic profession, and is the direct result of more than eight years of research and experimentation. Essentially, it is an attempt to simplify the making of process shots through the use of various existing commercial practices.

The Baker Process consists of the simultaneous making of both a negative of the foreground action and a travelling matte thereof, these are subsequently used in an optical printer and double-exposed upon any desired background negative. Every piece of equipment used in the process is already in commercial use today, while the technique of its use is extremely simple. According to Mr. Baker, the new process shows many advantages over existing methods, both in simplicity, commercial applicability, and flexibility.

The foreground action is photographed against a plain black velvet background. The camera used is a standard bipack camera, loaded with standard bipack film—"red Ortho" in front, and Panchromatic in the rear. The front film photographs the actual foreground action negative, and the rear film the travelling matte of that action. This is achieved by double lighting the action. The set is first lit with red light (i. e., by standard incandescent lighting units fitted with orange-red screens), in such intensity as to produce an overexposed, silhouetted image on the red-sensitive film at the rear. After this, further lighting is arranged, using ordinary incandescent units, with whatever diffusion may be desired, so that the subject is normally lit with white light, in order to produce a normal negative of the action on the Orthochromatic film in front. The black background is, of course, not illuminated. The scene is then photographed in the normal manner, and the two negatives developed. The front negative is normally processed, while the rear one is treated so as to produce a mere silhouette, for the matte. A print is then made from this matte negative to serve as the complementary matte in making the composite print. The normal Orthochromatic foreground negative, the two mattes, and any desired background negative are then combined in a single composite negative, made by conventional double-exposure with an optical printer.

Due to the fact that the Orthochromatic film used for the actual negative of the foreground action is reversed in the camera—run, that is, face-to-face with the rear negative, it is necessary to reverse the picture laterally in order to have the finished picture correct as to right and left. This is done by placing the camera at right angles to the action photographed, and using a 45 degree mirror in front of the lens. A similar prism, mounted directly on the lens would, of course, serve the purpose equally well, but the use of a mirror is held to be equally efficacious, and both cheaper and simpler.

The simplicity of this process, together with the fact that all of its components are parts of established commercial practice should make it very valuable for studio use. The process would appear to have rather greater flexibility than most of the established processes, with the possible exception of the transparency projection process. It enjoys two advantages over the latter, however, in that it avoids the "hot spot" which is almost inescapable with projected background, and likewise does not require so large an amount of stage-space or special equipment. In addition, too, the fact that practically every stage of the process is a part of every-day commercial practice should make it extremely economical—a consideration which, under existing conditions, will appeal to both major and independent producers.

The Baker process is covered by several patents issued to Mr. Baker several years ago, and is therefore a proprietary process. Regarding the process and its development, Mr. Baker says: "I first conceived the idea of this method of making process shots more than eight years ago. At that time, I carried on as extensive experiments as were possible with the equipment of the day, and applied for patents covering the basic features of the process. These patents were issued to me shortly after. I was forced, however, to turn my attention to other activities for a while, pending the development of various pieces of apparatus necessary to realize the process as a commercially practicable one. These developments have since taken place with the introduction of the bipack color process and equipment, machine development, incandescent lighting, and the perfection of optical printing equipment and practice. The Baker process is now, therefore, a commercial reality. There is literally no factor involved which is not a part of present-day commercial practice.

"Bipack cameras are in common use. Bipack film is as readily obtainable commercially as is black-and-white. Machine development is the general rule for either black-and-white or color negative. Moreover, there are today in Hollywood three large laboratories regularly processing bipack negative: Consolidated, Technicolor, and Multicolor. Any one of these three can handle the two negatives for my process in the regular course of their daily work, the special manipulations necessary in the development of the Panchromatic (rear) matte negative are simple, and within the range of control permitted by modern machine development.

"Optical printing is now an integral part of studio production. So far as I know, every studio has an optical printing department; even the smaller independents have access to such services. And any good optical printer may be used, so long as it can be adjusted for register. If this adjustment is not provided, it can easily be added to any optical printer.

"The photographing of the foreground action of scenes made with this process is far simpler than with any other process. Having spent more than ten years specializing in process work, and having worked with practically every known process, I feel that I can say this with authority. Most cinematographers, I know, find a good deal of difficulty in balancing the red-orange light used in certain of the existing processes, although my process likewise involves the use of red light, it is a very simple matter to use it. All that is necessary is to light the scene—with this red light—so as to give a silhouetted image; then light for your regular negative with white light, balancing it exactly as you would for a straight scene with orthochromatic film. The white light which falls upon the subject does not in any way influence the matte negative, which is made by the red light, aside from adding to the silhouette effect.

"The printing of the composite negative is simple, run-of-the-mill optical printing plus double exposure, which is being done every day in all optical printing departments.

"No special makeups, or anything of the sort are required from the first to the last, every detail is part of modern commercial practice.

(Continued on page 25)

Coordination

by **DR. L. M. DIETERICH, A.S.C.**

Consulting Engineer

COORDINATION can for the purpose of this study be broadly considered as the harmonious relationship of actions or efforts for the achievement of a desired result

It is necessary, whenever results depend upon the efforts of more than one man and even for one man, upon the harmonious co-action of the several personal faculties

If we try to apply this definition or rule of practical logic to an organization, necessary for the production of a motion picture, we are immediately confronted with the staggering amount of detail efforts, which must be properly coordinated in the complex array of parallel and succeeding interdependent human and apparatus performances

Even the first step or start in the production of a motion picture, the selection of the underlying story, plot or theme should depend or be largely influenced by such pre-realization, well defined by the word "judgment"

The mature psychological judgment of the general manager, in our case the "producer," may prompt him to select a "story," which he knows or thinks, should possess great entertainment values for the public

It is, however, of dominant importance, that the producer must, even at this initial decision be possessed of full knowledge (which can only be gained by practical experience) of the aforementioned limitations of personnel and apparatus performance

He must convince himself without doubt of the efficiencies of his staff and physical studio equipment, not only in general, but especially as related to the selected story, to be sure that the final screen presentation will impress upon the audience the full dramatic value of this story

When he has selected from his personnel and equipment the necessary elements of highest possible efficiency, he may find that such available working ensemble needs additions and/or replacements, in order to establish a working organization, which in his "judgment" should assure satisfactory box office returns.

Supposing, however, that the selection of all active elements, comprising this special organization, is faultless as far as their individual excellence is concerned—the final success is thereby by no means safeguarded, and absolute failure may even be the final result, if the detail performances, though they be of unexcelled perfection, are not properly coordinated

Perfect coordination, in this case, depends upon the fulfillment of several conditions. Suppression of individual or departmental and purely selfish credit-desires, unintentionally, but often intentionally injuring other detail efforts to the detriment of the whole; harmonious helpful cooperation to that extent, that even individual excellence must be suppressed if it increases the merits of the whole, by maintaining harmonious balance with other, less perfect performances, and finally the realization and subsequent control of activities, acknowledging the fact, that there is in this complex coordination of numberless detail efforts not one detail of such minor importance that it can be neglected

There is at the same time no detail of motion picture production, nor any limited number of them, which is or are the sole element, which controls or effects the success or failure of a "picture"

This statement will probably be vehemently contradicted by the author, scenario writer, director, art director, costume designer, cameraman, cutter or editor, electrician, property man, actor, casting director, laboratory chief and all his assistants and so on throughout the list of employees, any one of which in fact can nullify the best results of the efforts of the others.

These actually existing convictions (ask any one of the above list) more than anything else prove to us, that properly established coordination is useless, if not producing and followed by proper and disinterested cooperation.

All of these preceding statements have been of necessity of such broad terms, because they had to include all of the thousands of interrelated activities of hundreds of individuals and had to consider the numberless difficulties of operating a vast number of delicate apparatus

To be of real practical and exhaustive value, it would be necessary to expand this article into a work of many volumes, containing the analytical thoughts and observations of a number of experts and experienced individuals, accompanied by statistical facts and covering the entire history of the motion picture industry and containing also the more or less hypothetical recommendations of such contributors

We will, therefore, consider only one link or department in the chain of interacting performances and try to show its close relationship to practically all other departments or constructive activities

It will be shown that this department is of such importance that it is really the most important of all the departments.

But we frankly state, that if any other department would have been selected if could conclusively be proven that this other department is THE most important one and we certainly would get the approval and most enthusiastic support from any individual, actively performing the responsible duties of THIS department

To be in harmony with the nature of this publication we of course select as a striking example the camera department.

The perfect motion picture has not yet been produced, the perfect camera department is as yet not existing, neither in organization, personnel, nor technical equipment, and therefore modern photography is still far removed from perfection

But be that as it may, it is nevertheless an undisputed fact that there have been many pictures with publicly acclaimed beautiful photography and many pictures photographed by the same cameraman which were justly criticised for lack of satisfactory photographic effects.

The reason for such photographic failures was not a lapse of efficiency of the camera department in its personnel or apparatus, but the handicaps under which this department had to perform and solely caused by lack of intelligent cooperation of other departments.

In the production of a motion picture it is not sufficient that one department excels in its own sphere, it must have knowledge of the limitations of other departments. Otherwise the results of its own endeavors are crippled and the performance of his neighboring department is loaded with undue burdens. Result—the whole production suffers

We may here quote the statements of a department head of years of experience who very forcibly depicts conditions, actually existing at present and showing how detrimental lack of proper coordination and cooperation influences the "making of a good picture"

He states that photography in motion pictures is not con-

(Continued on page 24)

HAL HALL

says

Thanks

NOW and then a little ray of sunshine breaks through the clouds that usually hang over an editor's head, and no one but an editor, who is accustomed to receiving nothing but the complaints of his readers and his bosses, can realize just how much these little rays of sunshine mean Of late this writer has received a flock of letters congratulating him upon two of his editorials We thank those writers

Must be a lot of people who hear nothing but the kicks, because a large number of our letters have been written concerning the editorial "Appreciation," which appeared in the June issue One of these letters came all the way from France; and the writer of the letter was so sincere in what he had to say about the editorial and the magazine as a whole that he enclosed his renewal of his subscription—although it had not yet expired. He explained that he wanted to be sure he would not miss the magazine for even one issue

The other editorial was the one in the July issue on the subject, "Reward," in which this writer gave his personal views regarding the treatment of former soldiers Well, we are glad our readers have liked what we have written We only hope that they will continue to like it

◆

It Won't Be Long

ONLY two more months remain in which to enter the $1,000 00 Amateur Movie Making Contest which this magazine is conducting Just sixty-one more days in which to get your films in shape and ship them if you wish to try for the valuable prizes that are being offered Midnight of October 31st, 1932, is the deadline for getting the entries shipped So, if you have not yet started your picture, you had better get going today.

In addition to the four cash prizes of $500 00, $250 00, $150 00 and $100 00, there are equipment prizes that total more than $1000 00 in value These and the recognition that comes to the winners should make this an attractive contest for the Home Movie Maker who takes his picture-making seriously This contest will have an international flavor, for the entries are coming from France, Holland, China, India, Canada, Great Britain, the United States and—today an entry came from far-off Korea from a medical missionary who says that if he wins a prize the money will go to the work of caring for the sick

May we suggest to you amateurs who are entering a picture that you will be doing all of us of this staff a great favor if you send your pictures along as soon as possible Many are holding their pictures until the last minute This will make a terrific rush at the end If you can send your entry now we will appreciate it

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Vote

THIS may seem a bit odd on a page of a technical journal, but I feel that it belongs here For years I have listened to friends yapping about the manner in which our government is conducted They complain about this department and that, and make political speeches in the living room that would elect a new President Why not quit talking and go out to the polls this coming presidential election and cast the ballot that is your right in this Republic? If the serious-minded people of our country would vote more and talk less we might have better government

Cutting Salaries

THERE seems to be a bit of encouragement ahead in the line of business From all sides there comes a feeling of optimism, and it does begin to look as though better times are just around the corner.

When good times do return we wonder what certain employers will do in the way of finding an excuse to cut salaries and retain the cuts that have already been put into effect What we are driving at is simply this—A lot of individuals who have plenty of money for their own enjoyment and for meeting their own bills, have hidden behind the excuse of "depression" in order to cut and slash the salaries of the men and women who are giving their all for the interest of their employers. This is dirty—but damnably true in many cases And what is the result! Anyone with an ounce of sense knows that no man or woman is able to give the same efficient service if he or she does not know where the money is coming from to pay the next month's rent or meet the bills for the ordinary things that are necessary for just a mere existence As a result many business concerns have been hurt by the nearsightedness of some individual who thinks that a slash in salary solves all problems There is the element of human nature to always consider A man serves most faithfully the employer in whom he has confidence That confidence is not gained by making the worker suffer I sometimes go hungry

◆

Better Pictures

JUDGING from the previews this writer has seen of pictures slated for Autumn release, picture-goers will have better entertainment in the future than they have had in the past year or so Someone in the picture business must have discovered that, depression or no depression, houses showing REAL pictures were packed

Paramount, RKO-Radio, Warner Brothers, Columbia, Universal, Fox—and some of the Independents, have some really fine picture product for the theatre patrons This is much better than offering free silverware or sets of dishes to those who attend the theatres. It is a sad state of affairs when a theatre has to offer a free trip to Catalina or Coney Island in order to entice patrons to drop a few nickels at the box office Good pictures would bring many more nickels for, who wants to go to the theatre to get a free pair of shoes? This writer wants to see good pictures—so do most of us

◆

The Fan Magazines

STUDIOS and some of the trade press are making a terrible squawk about the manner in which "Fan" magazines handle interviews with the picture players—and especially about one interview in particular which recently appeared in one of these publications There is talk of censoring all stories by the magazine writers, barring them from the studios, removing picture advertising from their pages, etc

This writer takes no sides in the controversy However, it seems as though the industry is a bit late in discovering that a lot of drivel is handed out in many of these interviews—and a large part of it is inspired by members of the various publicity staffs There is one thing the industry forgets—that many a star's face has been saved by the discreet fan magazine writer who had better judgment than to print some of the silly remarks of the players Why not warn the writers and instruct the publicity workers and stars themselves in what to say

Du Pont's New Panchromatic Film

by **DR. V. B. SEASE**

PANCHROMATIC film made possible the adoption of the incandescent lamp as a convenient method of illumination in the making of motion pictures The success of the incandescent lamp in the motion picture studios then stimulated much work for the improvement of panchromatic film

The energy emission of the incandescent lamp increases in passing from the blue to the red end of the visible spectrum In order to take full advantage of the light from such a lamp, it has seemed logical to increase the yellow and red sensitivity of panchromatic emulsions

The results achieved along this line have meant a considerable saving in studio lighting, as well as more comfort for the people who work under the lights, but at the same time critical artists have pointed out the failure of highly red sensitive emulsions to record certain objects faithfully, particularly human faces Some of the latest panchromatic types of negative tend to record too heavily the red lips and the ruddy skin of motion picture actors and actresses Since make-up is a well established art in motion picture studios, it has been possible to obtain satisfactory results in spite of the high red sensitivity of the emulsions by altering the make-up The portrait photographer, however, takes his subjects more or less as they come, and he has pointed out emphatically that the prints from highly red sensitive negatives often yield very chalky countenances

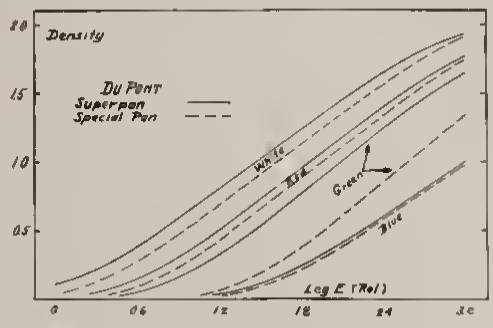

Fig 1 H & D curves for du Pont Special and new Superpan films-
White Unscreened incandescent
Red Screened by Wratten A filter.
Green Screened by Wratten E filter
Blue Screened by Wratten C filter

Recognizing the error of the trend towards higher red sensitivity, the du Pont Company has concentrated work on panchromatic emulsions with greater sensitivity in the green region of the spectrum This work necessitated the discovery of new types of sensitizing dyes and new technique in their application It has also required improved factory equipment and specially trained factory personnel for the film must be handled, during manufacture, in total darkness at almost every point-

The most recent improvement now being offered to the photographic industry by the du Pont Company is an emulsion with increased sensitivity, the increase being most noticeable in the green The sensitivities of the new product through the tri-color (A, B, C) filters are shown in Fig 1 where a comparison is made with the Special high speed panchromatic which has been the standard in recent years These data were obtained with incandescent light With daylight the high green sensitivity is still more striking Reference to the filter factor table below shows the factor for the B (green) filter to be less than the factor for the A (red) filter

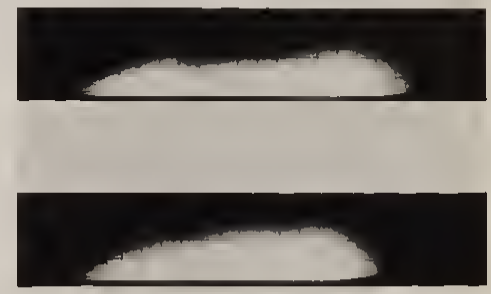

Fig 2 Spectrograms on du Pont Special (A) and new Superpan (B) films.

The spectrogram of the new emulsion is shown in Fig 2 in comparison with the spectrogram of the former high speed panchromatic Fig 3 shows for similar light sources the spectral response curves for the film and for the human eye This emulsion has a sensitivity corresponding quite closely to that of the human eye The excess sensitivity of the film toward the violet end of the spectrum may be quite accurately corrected by a K 1½ filter Thus corrected it records brightness of objects in nature as the human eye sees them.

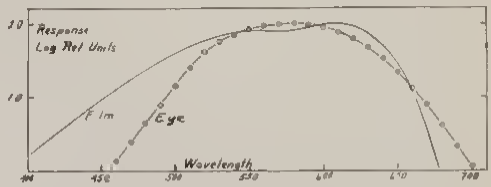

Fig 3 Spectral response curves for the film and for the human eye.

The fine grain characteristics of this emulsion are the same as that of the former du Pont emulsions which have been so satisfactory to the trade The filter factors are obviously quite different These factors for sunlit scenes are given in the following table

Filter	Filter Factor
Aero No 1	1 7
Aero No 2	2 7
No 12 Minus Blue	2 7
K 1	1 9
K 1½	2 0
K 2	2 0
K 3	2 2
G	2 9
23 A	6 0
A	8 5
B	5 6
C	11
F	17

(Continued on page 25)

"Ramn' Pinto" Morgan F. Reynolds

"At Grandmother's Knee" D. Schneider

"Volga River" D Schneider

Concerning Cinematography

Critical Comments on Current Pictures
by **WILLIAM STULL, A. S. C.**

O. K. AMERICA!

◆ The past few weeks have seen the appearance of so many excellently photographed productions that it is extremely difficult to decide which to mention first, or to treat them with the proper degree of detail. Perhaps the finest example of all-around cinematic artistry is "O. K. America!", the work of Arthur Miller, A. S. C. Mr. Miller has rarely, if ever, turned in a finer, more thoroughly artistic piece of work—and he has many notable films to his credit already. He has in this production embraced a wide variety of moods, settings and action, with perfect artistry and coherence. I have rarely seen a picture photographed with so sure a sense of cinematic feeling. Whether the scene be played in a night-club, a newspaper office, a dive or a tenement, Mr. Miller's treatment is always keyed exactly to the action, and the photography, though pictorial, is never intrusive.

"O. K. America!" is, I understand, one of those rare productions which both the supervisor and the studio executives "forgot," leaving the writers, director, cinematographer and cast strictly alone. The result is such an unqualified success for all concerned that it is to be hoped that other studio executives will take the hint, and develop faulty memories.

WHAT PRICE HOLLYWOOD?

◆ A few years ago, Charles Rosher, A.S.C., received the Academy Award for the best Photography of the year. Either at this year's Awards Banquet, or the next, I shouldn't be in the least surprised to see Mr. Rosher again called forth to receive one of the Academy's golden statuettes, for his work in bringing "What Price Hollywood?" to the screen is unquestionably the work of a champion. The photography throughout is superlatively beautiful, and adds the finishing touch of richness to an already lavish production. The lay critics frequently use the phrase "sumptuous cinematography", I hope that they may see and study this picture—and learn what the phrase can really mean.

One must also pay high tribute to some sequences of brilliant montage effects, conceived by Slavko Vorkapich and executed by Lloyd Knechtel. They will undoubtedly start a new cycle of such effects, which is to be regretted, for not everyone has the ability and the grasp of cinematic art that these two have here exhibited.

LOVE ME TONIGHT

◆ A most unusually interesting example of how sheer cinematic brilliance can make an outstanding hit out of a practically non-existent story. Victor Milner, A.S.C. has contributed some of his finest photographic work, and Director Rouben Mamoulian has literally made something out of nothing by his direction. It seems incredible that any man with but four pictures behind him could be able to so perfectly utilize every artifice of the cinema.

The picture primarily exemplifies Mamoulian's conceptions of the relationship between cinematic and musical rhythm, as he has previously expressed them in this journal. He has, I believe, utilized every directorial and cinematographic trick known to directors from Griffith to Eisenstein, and to cinematographers from Billy Bitzer to Tisse. What is more, he has utilized them so cleverly as to be imperceptible to any but the trained film-technician, and in such a manner that they are, literally, the picture. And he has created a piece of first-class entertainment, and revealed new facets of the Chevalier personality in the process.

Primarily, "Love Me Tonight" is more a director's picture than a cinematographer's; but Milner has shown, if anything even more than his usual artistry. There are several shots decidedly reminiscent of Eisenstein and Tisse, and much that is unmistakably Milner. The only possible criticism of the production—other than of the wretchedly inconsequential story—is that in much of the picture the key of the photography seemed too low, which had the effect of slowing up the tempo, making it seem too ponderous.

PASSPORT TO HELL

◆ Again one of our outstanding camera-artists comes through with his finest recent work. John Seitz, A.S.C., photographed this production, and did a difficult job with consummate artistry. The picture is laid in a tropical setting, necessitating much high-key photography, despite the highly dramatic plot. Due entirely to Seitz' artistic treatment, "Passport to Hell" is, visually at least, one of the finest and most convincing tropical films I have ever seen. There was no need for recourse to unnecessary effect-lightings nor artificial, oily perspiration to make the tropical atmosphere convincing. In addition, Seitz' compositions were consistently pictorial. Gordon Wiles' settings were also noteworthy, for they were natural rather than movie-esquely pictorial.

MR. ROBINSON CRUSOE

◆ When Doug Fairbanks, Sr., went down to the South Seas to make this picture, he had the tremendous luck to find a capable cinematographer waiting there for him. Max B. DuPont, A.S.C., was the man in question, he had left Hollywood to seek quiet retirement on his plantation at Papeete—but Hollywood would not let him rest. "Mr. Robinson Crusoe" is in itself a very good reason why Max shouldn't get much opportunity to rest for a long time. Made there in the South Seas, with all of the limitations naturally attaching to such a distant location, the picture is a glowing tribute to DuPont's artistry and technical ability. It is pictorial in the extreme, and technically excellent. In addition, it's well up to Doug's standard as entertainment.

CONGRESS DANCES

◆ Although the print of this picture viewed locally, and shown at a meeting of the A.S.C. was an unusually bad print, and badly hacked to pieces in the process of abbreviating to suit American exhibition needs, "Congress Dances" must go down as one of the notable films of the year. The photography, by Karl Hoffmann, is extremely fine. It is a pleasure to see a picture which is not continually backlighted as are most American films. The settings were remarkable. The direction made rather too much use of the moving camera technique, but every move was logical, and done in a rhythmic fashion unknown to American directors, with the possible exception of Mamoulian. The picture demonstrated in a high degree, too, the relationship between cinematography and music. By all odds, it is a picture that is well worth seeing and studying.

ROMANCE SENTIMENTALE

◆ With such limited space as is at my disposal for this department, short subjects can rarely be commented upon. But Sergei Eisenstein's little two-reel gem "Romance Sentimentale" is not an ordinary two-reeler. It is, I believe, Mr. Eisenstein's maiden experiment with sound, made several years ago, in

(Continued on page 36)

SENSATIONAL IN 1931

YET EVEN MORE IMPORTANT

»»» IN 1932

ACCLAIMED last year as a sensational medium for use with incandescent lights, Eastman Super-sensitive "Pan" has since proved equally valuable under arcs or daylight. Promising revolutionary advances in its original form, it has made even more surprising progress with its non-halation gray backing. Today, with rigid economy at a premium, it is at the peak of its importance. It gives the industry finest quality and maximum efficiency on every conceivable kind of "shot." Eastman Kodak Company. (J. E. Brulatour, Inc., Distributors, New York, Chicago, Hollywood.)

EASTMAN **SUPER-SENSITIVE**

PANCHROMATIC NEGATIVE (GRAY-BACKED)

..In the Realm of Sound..

S. M. P. E. Seeks Standards

ESTABLISHMENT of uniform national standards for all phases of the technical equipment and operation of the film industry, from the lighting and acoustics of studios to the projectors and screens of theatres, is proposed by the Society of Motion Picture Engineers Plans for the undertaking are outlined in a letter from Dr Alfred N Goldsmith vice-president of RCA and president of the S M P E , to the American Standards Ass'n

Creation of such standards would avoid the danger of confusion and waste resulting from the conflicting standards created by different groups within the industry, declares Dr Goldsmith

If the request of the society is approved, a technical committee representing all branches of the industry will be organized under the procedure of the American Standards Ass'n

The industry also needs standardization of terminology, which is at present in a confused state, says Dr Goldsmith "Such terms as 'blimp,' 'zoom,' 'pan,' 'tilt,' 'projection angle,' 'wow,' or 'flutter,' and the like, are used without any official recognition This situation requires correction so far as is feasible"

Among the standards for equipment and methods which are needed, according to Dr Goldsmith, are film sizes, acoustics of both studios and picture houses, amplifying equipment, recording equipment, camera silencing enclosures, re-recording equipment for modifying sound effects, photographic printing equipment, cameras, and laboratory processes

"Such fields as color photography also require study," Dr Goldsmith states "The various processes have never been satisfactory defined nor have the various forms of cameras, lenses, processing equipment, and projectors been put on a suitably precise basis Three-dimensional pictures require definition Frequency systems which give perspective impressions are classed as three-dimensional or 'pseudostereoscopic' A considerable amount of confusion exists here on terminology"

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New 16 MM. Step Printer

LOUIS S UHLER of 3422 Howard street, Detroit, Michigan, this month announces an interesting piece of equipment in the 16 mm field It is a new 16 mm Step Printer

The new printer is motor driven, 400-foot capacity and prints 15 feet per minute It has twelve light changes It has double claws, cam and eccentric type intermittent The shutter is the rotary blade type and the frame line is standard and can be adjusted It has an adjustable friction takeup insuring positive take-up The printer is constructed entirely of aluminum and weighs only 38 pounds It is 10 inches wide, 20 inches long and 25 inches high and has an induction motor of 1/20 horse-power, 110 A C

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16 mm. Sound-on-Film

WITHIN the next thirty days official announcement will be made of the establishment in Hollywood of the Ashcraft Laboratories with complete equipment and service for quantity production of 16 mm Sound-on-Film

Equipment has been developed for the reduction of 35 mm picture and sound track directly to 16 mm film, retaining all dimensions, the standards which have been set for 35 mm sound film The Ashcraft Laboratories have developed equipment for the direct recording of 16 mm sound film, re-recording and dubbing from disc to film and for sounding silent 16 mm film Another important announcement this concern will make will be the development of a Universal reproducing attachment to fit all late model 16 mm projectors by which this miniature sound film is made available to the present owners of 16 mm projectors

◆

New Camera Coming From Rico

OF CONSIDERABLE interest to the industry is the announcement this month from the Radio Installation Company of work on a new sound recording camera, adaptable for use with all recording sound systems While satisfactory amplification equipment may be constructed by studio technicians, successful production depends upon a high quality sound camera It is an endeavor to fill this need that the RICO organization has been working for some time to produce a sound head that will give satisfaction

In the new head, the sound modulated light variations will be photographed on the film passing over a large diameter drum sprocket, which is rotated by a heavy, minutely balanced flywheel, driven thru a dynamic spring filter network The accuracy of this flywheel and sprocket shall not vary more than 2 of 001 inch, as measured by a microscope focussed upon stroboscopic lines engraved upon the flywheel

An additional sprocket acting as a pull down and hold back agent, will feed the film to free loops before it contacts the recording sprocket eliminating any possibility of magazine flutter being transmitted to the film at the recording point

Provision is made to accommodate either Bell & Howell or Mitchell magazines, by a removable adaptor plate, and the magazine takeup is thru a direct shaft driven friction clutch, entirely eliminating belts

This new "RICO" sound camera will be offered with any recording method desired, either variable density with an optical unit for glow lamp operation, light valve, where valve is furnished by purchaser, or completely equipped for conventional variable area recording with a mirror galvanometer

While the standard product is designed for the new "RICO" 1 HP DC synchronous motor with a shaft rotation of 1440 RPM, gear adaptors will be provided for motor speeds of 1200, 1500, 1800 or any other speed specified

Ample lubrication is provided, and the use of ball bearings on the main drive shaft, together with oversized sprocket bearings, should insure a long life under continuous service Standard accessories include tachometer, footage counter, and necessary speed and power control rheostats and switches

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Improved Microphone Is Developed by RCA

DEVELOPMENT of a radically new type of microphone for sound recording and radio broadcasting is announced by RCA Victor Co In film work, it is possible to place the camera at absolute right angles to either sensitive side of the "mike" where sound pickup is almost down to zero and eliminate entirely the noise of the camera grinding It will even permit whispered directions to performers which this most sensitive of "mikes" will not transmit The problem of studio acoustics also is simplified

Ufa

(Continued from page 8)

to which I have already referred does not confine itself to the writing of the script alone it embraces rehearsal as well Nothing is actually shot until every member of the cast is literally letter-perfect in his part If there is music, this, too, must be perfect In many instances, every scene is worked out jointly by the director, the cinematographer, the recordist, the composer and conductor and the cutter Everything must, before it is photographed or recorded, be absolutely perfect, in every way, not only in itself, but in relation to every other part of the scene, and as a part of the complete picture In consequence, the German director needs fewer takes, and far fewer "protection shots" than is customary here More time is taken in rehearsal, but less film and labor is expended when a scene is finally photographed, it is **right** It is sure to fit into its place in the final picture, perfectly

Partly as a result of this, there is far less "dubbing" or re-recording necessary than is the rule here

The technical equipment of the German studios—especially of course, Ufa—is every bit as good as that used here in America, in some cases it is far better Absolutely silent cameras are universally used, there are no blimps booths bungalows or blankets necessary Oddly enough, the cameras are French—the excellent deBrie Silent Cameras, which may be used uncovered within twenty inches of the microphone The apparatus for the making of moving shots is likewise superior—especially the deBrie motor-driven perambulators In lighting, arc lighting is the rule, almost to the exclusion of incandescent equipment The Tobis sound-equipment is likewise excellent The studio recording channels are much simpler than those I have seen here The recording is done in a small, portable sound-booth, which is placed on the set rather than in a distant truck or monitor-room Monitoring is through a loudspeaker rather than earphones

There are a number of Cinematographers in Germany whose work I am confident will prove of interest to their American confereres Karl Hoffmann for instance, whose photography of "Congress Dances" has already been seen here, is at present Ufa's ace cinematographer Very close to him is Gunther Rittau, who, with Hans Schneeberger, photographed the spectacular "White Hell of Pitz Palu," and is now engaged on Universal's "Iceberg" Lastly, is a little-known young artist by the name of Tchet To be precise, his name comprises several more syllables then this, and sounds like a spasm of sneezing, but this young Russian has wisely abbreviated it to "Tchet," which is, I predict, one which will become famous in cinematographic annals He has been working with Ufa for some time—he was with Karl Freund, A S C, as second cinematographer on "Metropolis"—but he has only recently graduated to the dignity of a First Cinematographer His work shows a world of originality and freshness

To sum the matter up, Ufa has developed a studio which, though less elaborate than many American plants, is none the less in every way as well equipped There, the Cinematographer enjoys the prestige and honor that his attainments and responsibilities entitle him to there, film-making is a recognized profession—an Art And there, there still remains that esprit de corps which we here lost when the movies became a big business racket '

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The Duplication of Negatives

(Continued from page 13)

D. The Duplicate Negative

The duplicate negative should be made on Duplicating Negative film, emulsion series 1505 This film has sufficient printer speed so that enough exposure can be obtained through the dense master positive without changing printer lamps The yellow dye in the emulsion, which absorbs the wave-length of light to which the emulsion is most sensitive, reduces irradiation or light scatter and, therefore, insures good definition; greatly extends the latitude (ability to reproduce a wide range of tones correctly); and lowers the contrast of the emulsion Duplicating Negative film must be handled in the darkroom with the same precautions as ordinary par-speed negative film, using the Wratten Series 2 safelight

E. Printing the Duplicate Negative

As with the master positive, sufficient exposure must be given to the duplicate negative so that every tone and detail of the master positive will be faithfully reproduced **Good duplicate negatives have no clear shadows, even when they are present in the original negative.** The shadows of the duplicate are always somewhat gray, and while those in some scenes may be more dense than others, depending upon the range of brightness in the subject, none of them should be glassy clear Lack of exposure in printing the duplicate negative produces a lack of quality in the shadows of the exhibition print

F. Development of the Duplicate Negative

The duplicate negative should be developed in the borax developer, formula D-76 The degree of development should be such as to reproduce the contrast of the original negative If the master positive was fully developed, the average time of development for the negative when employing rack and tank methods will be approximately 7 to 8 minutes in fresh D-76 developer at 65° F This degree of development corresponds to a gamma of approximately 0 5-0 6

Original negatives may be divided into three general classes according as they are normal, flat, or contrasty In the process of levelling up the different scenes for the duplicate negative, so that the final printing operation can be carried out at a single light setting and that all the prints will require equal times of development, the first rigid requirement is to keep the degree of development of the duplicate negative at or below the specified degree (gamma 0 55 or less), for this insures minimum graininess in the exhibition prints When it is desired to change the contrast of the duplicate negative from that of the original, it is best accomplished by changing the contrast of the scenes in the master positive by varying the times of development In general, studio negatives are quite uniform in quality so that usually enough variation can be obtained through slight changes in the master positive

The duplicate negative should be fixed for 20 minutes in a properly compounded acid fixing bath If the film is fixed in an incorrectly compounded bath or is allowed to fix for too long a period, the rate of washing out of the dye will be retarded If the washing is incomplete or uneven, the dye which remains in the film will cause the print from the negative to be mottled and uneven Rinsing the film for several minutes in water between developing and fixing will greatly accelerate the removal of the dye

G. Printing Precaution

It is **very** important when making duplicates to clean the original negative and master positive, because defects are cumulative Dirt on the original negative or master positive will show up objectionably in the final print After the original negative and master positive have been timed, they should be carefully cleaned to remove all traces of dirt Chamois skin or a good grade of plush moistened with carbon tetrachloride should be used for this purpose Directions for cleaning films are given in a previously published article entitled ' Cleaning Liquids for Motion Picture Film "

Acknowledgment

The authors are indebted to Messrs H A Doell, A J Miller, and H Parker, all of this laboratory, who assisted with the experimental work

Reference

7 Carlton, H C and Crabtree J I Cleaning Liquids for Motion Picture Film Trans Soc Mot Pict Eng No 30 277 1927

Coordination

(Continued from page 15)

sistently good He says:

"The reason is that motion picture photography is not a one-man job—yet everyone in the studios today seems to labor under the impression that it is You can't make a picture by merely getting a cameraman, giving him some film and a camera, and telling him to go out and make a picture You've got to cooperate with him give him something to photograph—people, sets, and a story Furthermore, each of these things has to be provided with the thought of their suitability to being photographed For, after all, that is the only real reason for everything that goes into a moving picture, to be photographed and sold to the theatre-going public You can make the best actors in the world play the greatest story, against the most gorgeous sets—but if any of them—or all of them—are not individually and collectively suited to their jobs of **being photographed**, the result won't be as successful as it could be

"You would think, of course, that after some thirty years of making moving pictures, picture people would realize this fact but most of them don't Instead of thinking in terms of the completed picture upon which they are working, most of them think merely in terms of their individual job They forget that their work must eventually be filtered through the lens of the camera in order to be really completed, and passed on to the public Instead, then, of being **camera-minded**, they are **job-minded** As a result, the picture suffers

"In theory, every department—every individual, from the producer down, should do its work constantly mindful of the fact that its contribution must, in some way or other, be photographed, and that, to be photographed to the best advantage, it must be perfectly coordinated with the contribution of every other department in such a way as to give the cameraman a photographically perfect subject to photograph Then we would have really fine pictures!

"But that is theory In practice, things work out very differently Each department does its work as well as possible—but apparently with only the thought of proving its own brilliance, regardless of how the other factors that go to make up the picture may suffer

"In the very beginning of things, a story is selected From some of the things we see on the screen now-days, it would certainly seem that the stories were selected by people who had never seen or heard of a camera But, no matter the producers have come in for quite enough criticism on this score elsewhere—we all have heard the story of their story-blunders often enough, though we rarely hear much said in favor of the times when they **didn't** blunder At any rate, our story is selected

"Then the story is adapted—put in continuity form, so that it may be photographed Here is a job that certainly calls for camera-mindedness Sometimes the scenarists have this faculty, sometimes they haven't At any rate, even though they sometimes do ask for effects that even the most ingenious trick-photographer can't supply—and often seem to go out of their way to avoid using simple photographic devices for putting over their points, they do try to see things more or less photographically So, our story is adapted

"And here is where the massacre—from the cameraman's viewpoint—begins Copies of the script are sent to the set, costume, and casting departments And each of these departments forthwith goes ahead to do brilliant work—too often with small consideration of each other, and still less of the cameraman and his problems

"The Art Department reads the script over and leaps to its drawing-board to turn out a collection of architecturally brilliant sets

"The Costume Department likewise proceeds to devise new and beautiful creations to bedeck the players

"The results are truly wonderful—individually Collectively they are atrocious And the poor cameraman is supposed to step onto the set and make the combination of these two look attractive on the screen! If he doesn't, everyone gleefully shouts that he is solely to blame If he's lucky, of course, it is **'My** sets,' and **'My** costumes' that did it.

Of course the sets **are** beautiful So are the costumes But when you bring the two together, you often see that they were designed with little or no reference to each other. Their designers simply forgot—or overlooked—the fact that their creations had not only to be used together, but to be **photographed** together To successfully meet this demand, the respective designers must not only cooperate with each other, but **cooperate individually and collectively with the cameraman.** Even if they don't know which particular cameraman is going to be assigned to the picture, they can at least consult some cameraman, who should naturally be glad to help them, even if it isn't his picture And, to augment this, they should strive to become camera-wise. Too many art directors delude themselves into believing that they are camera-wise when they merely know (by rote) the angular differences between a 40mm, 50mm, and a 75mm lens Too many costume designers fool themselves the same way when they squint at their drawings through an old blue (ortho) monotone glass The result, naturally, is that some morning the cameraman comes to work and finds himself confronted with impossible combinations of sets and costumes One recent instance was of an unlucky fellow who was one morning handed a most beautiful set: an ultra-modernistic bar, all in black and white—mostly black His star appeared in an equally striking costume—all black, while the men were so many shadows in black evening clothes How he managed to photograph these and prevent their running together into a mere blur of black, even he doesn't know But that was not the end for him the next day, he found himself working on a beautiful, soft grey set—with his star also in beautiful, soft grey Regarded as a business of matching the colors of set and costume, it was a decided success, but as a matter of providing an even **passably** photographic subject for the photographer, it was an abject fizzle Viewed in retrospect, it's decidedly funny—until we consider how much valuable time was wasted in an effort to make these un-photographic combinations photograph even passably Just a little intelligent, camera-minded cooperation could have prevented this difficulty and expense

Thus far we haven't said anything about the directors, but these gentlemen are equally deserving of attention When all the other factors are perfectly coordinated, the director can still make or mar the photographic perfection of his picture When things are less perfectly organized, his power for photographic good or evil is vastly increased First of all, everything depends upon the director's methods of action If he is sufficiently camera-minded to see when the cameraman is up against such difficult problems as we have just spoken of, he can, if he will, help him tremendously Supposing, for instance, that a director found his cameraman faced with such a combination of grey set and grey costumes, he could either increase the problem, or simplify it If his attitude is that of Shakespeare's character who said "I am Sir Judge, when I open my mouth, let no dog howl", he puts the cameraman (to mix our metaphors) "on the spot" If, on the other hand, he is willing to adapt his dramatic requirements slightly to aid the cameraman—by, for instance, playing his action far enough from the walls to allow an attempt at separation through lighting—he can help the cameraman out of the difficulty in which he has been placed In other words, if he realizes, that only through increased cooperation can be alleviate the damage done by lack of cooperation on the part of others—and from which he must, in the long run, suffer quite as much as the cameraman—he can do a great deal to get good pictures of un-photographic subjects

"Then there is another point where camera-wisdom on the director's part can improve photography That is in the matter of the now popular moving-camera technique This device

(Continued on page 26)

Du Pont's New Film

(Continued from page 17)

No 72	70
3 N 5	44
5 N 5	63
X 1	31
X 2	38

The new film is supplied regularly on nonhalation base Three nonhalation features have been incorporated in this film, a stained emulsion, a light retarding undercoat, and a base, not backed but tinted throughout its entire body

The new emulsion has developing characteristics similar to those of the former emulsion, and the usual developing technique now in use in the commercial laboratories is applicable to this emulsion More care, however, is required in the safelights for handling this film It is much more sensitive to green safelights and should, wherever possible, be handled in total darkness Laboratory men who are accustomed to the handling of panchromatic film under the series III Wratten safelights should check the safety of the filters with a sample of the new film and reduce the level of illumination if necessary.

◆

New Schedule For Para. French Studio

A NEW production schedule for Paramount's Joinville studio is being mapped out by Joseph H Seidelman, home office foreign department executive, who is now in France, in conjunction with Robert T Kane, in charge of the plant Seidelman returns to New York the middle of next month. As Paramount is making all its French product at Joinville, the company is not disturbed by the new French law prohibiting importation of pictures dubbed outside of its borders

The Baker Process

(Continued from page 14)

'The possibilities of the process are unlimited; it will accomplish anything possible by other processes, and in some instances, more Especially is the freedom of movement greater. There is no necessity for cutting off the feet of the actors used in the foreground action, nor of showing the whole scene in closeups. The Baker process, alone, will permit the actors to actually walk into the scene, and up or down streets, steps, etc, in the process background, exactly as freely as though on a normal set The process, of course, like all types of process photography, demands unusually precise machinery and accurate calculations of perspective between the foreground and background shots; the background plates, of course, must—as always—be free from weave, and rock-steady These, however, are the unchanging requirements for all processes

"In a word, I feel that the Baker Process, by virtue of its simplicity, its commercial components and its flexibility will prove a real and valuable addition to present-day process photography In addition, through its economical operation, it should perform an added service to the industry, saving time and money for major and independent producers alike"

◆

New Screen Music Form

A NEW form of musical technique known as "photographic music" will be introduced in Al Jolson's new United Artists picture, "The New Yorker," according to Joseph M Schenck. The innovation is credited to Richard Rodgers and Lorenz Hart, composers The music will run throughout the picture and constantly move with the story

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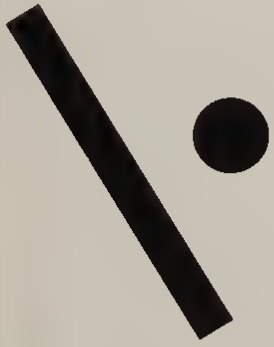

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Coordination

(Continued from page 241

is, in its place, a very legitimate device for emphasizing dramatic points, and for smoothing out and accelerating the progress of a story. In its place, no one can find any fault with it. Unfortunately, however, since the cry has been raised for more movement in our pictures, this otherwise legitimate device has been greatly abused. Needlessly so, too, for in the final cutting, many of these perambulating shots have been found superfluous, and accordingly, been left on the cutting-room floor. In one film that was made recently, there was a particularly spectacular sequence of perambulator-technique. Viewed abstractly, as a piece of scenario-writing or direction it was most brilliant, viewed concretely, as a matter of photographic story-telling, it was ridiculous. In one scene, there were no less than twelve focus-changes, and innumerable light-cues, while the camera was supposed to poke its nose into every corner of the set, and do all sorts of weird acrobatics. The scene took nearly half a day to rehearse and another to shoot, I'd hate to say how many gray hairs it gave the camera, sound and electrical crews. In due course it was photographed, and in due course the picture was cut and released—minus this wonderful perambulator shot, which was cut up into the individual close-ups and long-shots of which it was composed. Had the director and scenarist in this case been truly camera-minded, the scene would have been eliminated in the script—and before the company had wasted a day on photographing scenes, which could have been made separately in about twenty minutes. And—the photography of those individual scenes would have been vastly better. Each scene could have been lit and photographed to its best advantage instead of being sacrificed to make this 'brilliant' bit of cinematics possible.

"However, there are some camera-minded directors. We are impressed with the fact that some directors invariably manage to get good photography, even when working with inferior cameramen—and some others never manage to, no matter with whom they may be working.

"The cameraman certainly deserves this sort of cooperation from his associates, whether they do their work on the set with him or in drafting or executive offices. His work—even at its simplest—is the most difficult and intricate type of photography yet developed. This is so not merely because he is dealing with motion, rather than with static compositions, but because of certain basic technical limitations inherent in motion picture processes. A still photographer may make a picture. It may be good, technically, or it may be bad at any rate, he has the beginning of a picture on his negative. The things that he can do to that picture between the development of the negative and the exhibition of his completed print are innumerable—and amazing. Leaving aside the more obvious tricks of retouching and multiple printing, the degree of control that he can exercise in merely the ordinary printing processes is tremendous. Is his negative too soft? He can correct that with a special contrast paper. Is it too contrasty? He has a special soft-contrast paper for that. Not only that—he has three or four degrees of each of these special papers, and if that isn't enough, he can play around all day, balancing print-timing, developing time and temperature, and even the formula of his developer, until he gets exactly what he wants. Furthermore, each print that he turns out is an individual thing. It is complete in itself, and need not match any other.

"The cinematographer, on the other hand, has no such control available. **Everything must be in the negative.** His only chance at control is in the actual making of that negative in his camera, and, to a limited degree, in the development of the negative—and there it is usually only in the matter of developing time. He has but one standard contrast of positive film upon which to print his picture. He can control his positive slightly—very slightly—by changing the intensity of the printing light. From then on, there is no control possible, as the print goes through a developing machine, which, unlike the negative developing machines, allows no control at all. This is bad enough but the most difficult part of his work is that each scene is not an individual picture, but part of an intricate whole. He may be many weeks or months photographing the various scenes for his picture, under all sorts of conditions ranging from the studio stages to the desert, the mountains, or even at sea on a boat, or high above the world in an airplane. **And every scene of his picture must perfectly match every other scene in the picture in photographic quality.** This, to put it mildly, is an unutterably difficult assignment—yet our cameramen today are fulfilling it ninety-nine times out of a hundred. And this with but pitifully little real, camera-minded cooperation from their fellow-workers in the other departments. The cameraman is generally more than willing to cooperate with his associates in the other production departments, years of experience have shown that. The truly successful cameraman realizes that his success depends on this cooperation—and the chap who refuses to cooperate, no matter how individually capable he may be, rarely attains or holds a particularly high place as a cameraman. Yes, the cameraman who is worth his salt is invariably willing to go out of his way to cooperate with his associates. He knows that motion picture photography is not a one-man job, but the product of many intelligently coordinated minds."

These statements depict practical experience in one studio only, but can be paralleled in practically any other organization or production unit.

The remedy for such unsatisfactory condition lies in the fact that proper coordination and cooperation is at present not "proper" and consistent for the reason, that no time is enforced or even countenanced for cooperation of the various departments **before their actual production activities start.**

Such pre-activity cooperation, known under the much dreaded name of "conferences" would to a great extent prevent later developing personal jealousies, and departmental strife, so-called buck-passing etc. and prevent the arising of a great many difficulties and embarrassing problems now confronting all departments active in the production of a motion picture.

◆

New 16 MM. Company

PRODUCTION of 16 mm. pictures is the object of a new company formed by George Coudert and Arthur Levy, attorney. Offices of the new firm are at 521 Fifth avenue. Work will be done at the Paragon studio in Jamaica.

◆

German Bars Down On Foreign Artists

THE bars that were put up on actors, writers and directors of foreign lands from coming into Germany to work have been let down by the Ministry of the Interior with no restrictions whatever on production people.

The strict film quota, however, is still in full force with little hope of any new provisions being created for the entrance of foreign product in any big block.

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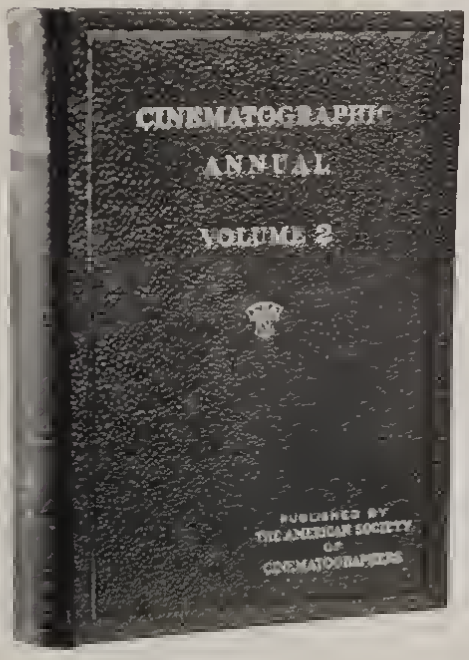

64 Page Pictorial Section

Just A Partial List of Contents

• The Cinematographer's Place in the Motion Picture Industry, Lighting, Cinematic Teleology, Making a Fadeout by After Treatment, Chromatic Correction in Cinematographic Lenses, Transmission Losses in Motion Picture Lenses and Their Significance, Making Matte Shots, Projection Arcs, Aerial Cinematography, The Motion Picture Industry and the School, Improvements in Motion Picture Film, The Relative Masses of Photo-Silver, Cinemicrography with the 16 mm Camera, What They Use in Hollywood, Straight Line and Toe Records With The Light Valve, Process Photography, On the Theory of Tone Reproduction, with a Graphic Method For the Solution of Problems, A Method For Testing a Photographic Lens, Characteristics of Du Pont Panchromatic Negative Film, The Larger Screen, Motion Pictures in Natural Color, Graininess of Photographic Deposits—A Review, Acoustic Power Levels In Sound Picture Reproduction, A Parallel of Technical Values Between 35 and 16 Millimeter Films The Use of Carbon Arc Lighting, Optical Printing, Costumes and Sets As Mediums of Expression, Eastman Supersensitive Panchromatic Type Two Motion Picture Film, Making Tests With a Small Camera

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Personality in Portraiture

(Continued from page 7)

that of all of the many people whose portraits he had made, the most nervous and camera-shy was—Charles Chaplin On the set, Mr Chaplin—like many another star—is so completely immersed in his creative work that there is literally no consciousness of the fact that he is being photographed, his mind is completely absorbed by his characterization, direction, and so on In the portrait gallery, on the other hand, he has nothing to think of except that he is being photographed Naturally, he is nervous

Knowing my sitter, I can not only chat amicably with him, and at least minimize his camera-fright, but, like a director, play upon his emotions and induce the mood and expressions that I desire

There is, as well, a further disadvantage in the portraiture of actors and actresses, only too often, they want to appear, not as they actually are, but as they think that they are Almost all comedians, for instance, are to some extent obsessed by the "I-want-to-play-Hamlet" complex, in portraits, they infinitely prefer to be made to look tragic, as though about to declaim, with a sigh, 'To be, or not to be—" The woman, on their part, frequently want to be made to look like Garbo, or Ann Harding, or Dolores del Rio, according to their type It takes diplomacy of the highest order to secure the pictures you want, while at the same time getting some that will suit the vanity of the sitter—and moreover, to secure fifty or a hundred (possibly more) different poses in the space of a half hour or so

Mr. Bachrach at work in his studio.

In my own work I prefer to rely almost exclusively upon lighting for my effects and compositions Many excellent workers, I realize, employ settings and props to excellent purpose, but to my mind, this is an admission of weakness The use of elaborate settings detracts from the picture, it makes the result more a pictorial design, with the figure more or less incidental, than a true portrait of a personality. Furthermore, editors prefer big heads, and are likely to trim portraits down to give them what they want—regardless of the effect of such trimming upon the composition

Portraiture is very closely akin to cinematography The cinematographer has very little need for accessories in the making of closeups, all he needs is a face and some lights and shadows That, to my mind, is all that the portrait artist needs. Occasionally—but only occasionally—minor hand props are useful Most important are a mastery of mood lighting, and the ability to bring out, through lighting, posing, composition, and applied psychology, the personality of the sitter. All of the portraits used to illustrate this article, for instance, were made with the same background, yet a wide variety of moods and effects were attained

Mass production at once simplifies and complicates the problem In my own department, I must frequently deliver the retouched negatives of a sitting to the publicity department within twenty-four hours of the time the sitting is made, together with sufficient contact prints and enlargements to serve the needs of this office The negatives are shipped to New York, where further prints are made in a commercial laboratory for the use of the New York office Therefore, my problem is much the same as that of the cinematographer on the set, a standard film, a standard development, a standard grade of printing and enlarging papers, all standardized so that the New York laboratory can get as good prints as I can If diffusion is necessary, it must be introduced in the enlarging, my negatives must all be shot sharp

But I have found neither this nor the necessity for reproduction to be in any way obstacles to using lighting as my principal tool I try, of course, to make my light-effects reasonably well-defined, so that they will reproduce clearly, fortunately, such treatment, too, is usually best suited to making a personality stand forth forcefully On the other hand, I do not believe that the flat lightings so often used by studio portraitists who are fearful of the limitations of the photo-engraving processes really lend themselves so well to reproduction Certainly, they do not make for either distinctive pictures or forceful character-portraits Therefore, to my mind, the successful motion picture portraitist—the one who alone deserves the appellation, "Artist," is the one who resolutely ignores the plaints of those who fear that, unless the portrait is flat and commonplace, it will not reproduce well, the man who strikes out boldly and makes his pictures pictorial portraits of personalities—not of people

◆

Small Sets

(Continued from page 12)

tion, and more exact work therein But with but two or three days more time in preparation, the cost of the set construction can be reduced by half, the effectiveness of the finished production can be enormously enhanced, and production facilitated The sole requirement is that those concerned in the preparation be truly camera-minded After all, it is not words on a script that we are selling to the public, but pictures on a screen Manifestly, then, the script must be essentially pictorial. It must be prepared, not by word-merchants, but by pictorially minded artists men and women who can visualize action and setting as pictures rather than words It would be well, therefore, for us to take a leaf from the book of the European producers, and make the preparation of the final script a matter to be handled not only by the writers and executives, but by the director, art-director and cinematographer as well Each can help the other, and each must inevitably contribute greatly to the result Each will do his work, too, with a clearly defined picture of what the ultimate result on the screen is to be Then, and then only, will the full fruit of each man's effort be brought intact to the screen Then only will our pictures be coherent units, made with one thought motivating every worker And the result will be true motion pictures, predominantly pictorial, bringing to the screen the maximum value for the minimum expenditure

STYLES *from* HOLLYWOOD

Fall Costumes

◆ At upper left is Joan Bennett, Fox star, wearing a blue crepe dinner gown and stunning coat with collar and cuffs of silver-tipped fox fur. Dark blue suede slippers and bracelets of blue crystal beads and rhinestones complete this Autumn ensemble.

◆ At upper right is Peggy Shannon, another Fox player, as she appears in her new Autumn formal costume—A nude satin with empire waist and form-fitting skirt modeled on bias lines. The gown is backless except for extended shoulder straps. The Eton jacket wrap trimmed with nude fox fur completes this costume.

◆ Lower left is Greta Nissen wearing a rough-weave white woolen jacket suit designed for Autumn afternoon wear. Her scarf is red and blue. The hat is an early fall vagabond type and the sandals and gloves are of white kid.

◆ Lower center shows Sally Eilers, Fox player, in a green and biege sports ensemble. The skirt is of biege chiffon rough woolen fabric. The green jacket is of same material. A blouse of biege crepe roma, beret of green French felt, belt of woven biege leather and gloves and sandals of biege kid complete the costume.

◆ Minna Gombell, Fox player, is shown at lower right wearing a black wool crepe and white chiffon velvet ensemble designed for Autumn. The skirt is gored and form fitting. The Eton jacket features a cape, edged with black fox.

Amateur Movie Making

by **WILLIAM STULL, A.S.C.**

8 mm. vs. 16 mm.

THE recent introduction of the revolutionary new eight millimetre film system has raised in many minds the question, "What is this new system going to do to the accepted 16 mm standard?" The answer is simple enough, just what the introduction of the Brownie still camera did to the Graflex and the larger Kodaks. It was not so long ago that still photography was a hobby only for those who possessed both money and skill; the money to buy an expensive camera and the skill to operate it. Then came the little two dollar box camera and the famous fool-proof film in the yellow box, accompanied by myriad "photo-finishers" and the slogan "You press the button—we do the rest."

As a result, there are today two great classes of still photographers: the man in the street, snapshooting with his Brownie, and the advanced amateur, semi-professional and professional photographers seriously making pictures with their Graflexes, Deckrullos, Leicas and such instruments. The Brownie type of camera has created an entirely new class of amateur photographers, people who could not possibly have engaged in the hobby previously, but who can now—thanks to the simplicity and cheapness of the box-camera—enjoy the sport of picture-making.

The new Cine-8 system must inevitably do the same in the field of cinematography. It will open the doors to hundreds of thousands who could not otherwise afford to make movies, and through this renewed impetus to the film and camera business, inevitably result in great benefits to the established 16 mm. system as the medium of the semi-professional, the scientist and the advanced amateur, for the snapshooter, now that 8 mm. with its lower cost and even greater simplicity is available, will hardly trouble with 16 mm. And that is entirely as it should be, for present-day 16 mm. apparatus is high-quality, precision machinery, and as badly wasted in the hands of a calloused snapshooter as would be a Graflex.

But because the new standard is intended primarily for mass consumption, it does not in the least follow that it is not high-grade apparatus. Quite the reverse! To seek a parallel in another field, there are few cars better designed or built than the Ford, yet it is made primarily for the masses, who cannot afford—and perhaps would not appreciate—such machines as the Rolls-Royce. Each has its place, and its distinctive clientele, so, too, the cine-8 and the more adaptable 16 mm. apparatus. The one gives you simplicity and rock-bottom economy, the other, precision-workmanship, detail refinements, tremendous adaptability and vast possibilities. For although many cinematographers fail to realize it, the best of modern 16 mm. apparatus will enable one to do almost anything professional 35 mm. cameras can—and to do some things (such as color cinematography) vastly better than is possible professionally.

So, all honor to the ingenious engineers who devised the new standard, and to the far-sighted executives who have sponsored it! They have, at a single stroke, opened the door to millions of new home-movie makers, and placed 16 mm. in its rightful place as the medium of the professional, the scientist, and the advanced amateur.

The Contest

While by no means all of the films entered in the AMERICAN CINEMATOGRAPHER'S Contest have as yet been received, they certainly bear out the last statement. 16 mm. is capable of wonderful things, when used as intelligently as it has been by the majority of the contestants. It is not only a wonderful hobby and a means for making interesting photographic records of moving objects, but a truly artistic medium. I am constantly amazed at the ability and originality shown by the various amateur cineastes whose films have been received, for they exhibit not only artistic ability, but resourcefulness and a mastery of technique far beyond the ordinary meaning of the word amateur.

The time for entering films is now growing rather short, and as the summer is all but gone, I suspect that the majority of the films are already photographed and now in the process of editing. Last month I made several remarks on editing, but space prevented any mention of the closely related subject of titles. Even as editing will make or mar a picture, so will titles. Titles, moreover, must be considered both from the standpoint of working and of visual effect, they must match the rest of the picture both as to literary and photographic mood.

Theoretically, the best picture is one with no titles—a picture in which everything is told pictorially. Actually, of course, this perfection is almost impossible of attainment. Even with the resources of the greatest writers, directors and actors, at the time when the silent film was at its peak of perfection the perfectly pictorial film was a practical impossibility. Chaplin, not only the greatest pantomimist of our time, but the greatest all-around cinematic genius, was occasionally forced to use titles. The only 100% pictorial, titleless major production, "The Last Laugh," was never duplicated, while scores of lesser productions were literally saved from failure by the use of clever titles. Accordingly, it must be considered almost impossible to produce a successful titleless film, even with the aid of a Chaplin, a Jannings or an Erich Pommer.

Titles

The principal reasons for using titles are:

1. To explain the theme and purpose of a picture.
2. To identify and characterize the actors, the setting, and the time and place of the action.
3. To convey ideas which the pictorial action cannot or does not convey, as spoken dialog.
4. To cover lapses of time, changes of location, or breaks in continuity.
5. To save footage or production expense by substituting for scenes not shown.

In some of these uses, titles are indispensable, in others, they can sometimes be eliminated. It is obvious that pictured action is more effective than the printed word. Therefore, when making films from a script or outline, never include a title where action or some visual device will suffice. Such pictorial devices are better than the best titles, and give subtlety to any production.

Wherever titles are used, however, they must be perfect. See to it that your titles are so worded as to be in perfect harmony with the balance of your production, and for heaven's sake, don't overwrite. Make the titles clear and concise, brief, but not telegraphic. Keep the wording clear, correct and understandable, without unnecessary slang or technical terminology. Dialect titles are hard to write, and harder yet to read—so avoid them. Likewise, go slow on the wisecracks, humor is one of the fastest-changing phases of modern

(Continued on page 43)

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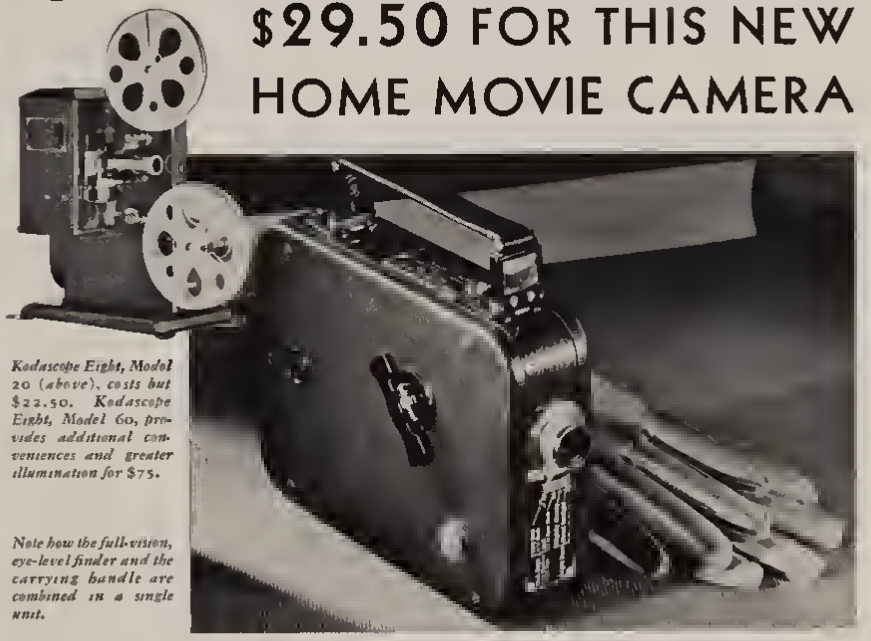

Kodascope Eight, Model 20 (above), costs but $22.50. Kodascope Eight, Model 60, provides additional conveniences and greater illumination for $75.

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EASTMAN KODAK COMPANY

Rochester, New York

The Elements of Makeup

by **JAMES BARKER, M.P.M.A.A.**

Part II—The Foundation

DISREGARDING the hair, which forms a separate topic in itself, a normal makeup comprises two main divisions the base—grease-paint and powder—which gives the face the desired tone and texture, and the features—eyes, eyebrows, eyelashes and lips—which give the face character and expression Each is equally important, though the latter, naturally, requires more skill in application

The foundation of any makeup is, of course, the skin upon which the cosmetics are applied While a properly applied makeup will conceal all ordinary blemishes or irregularities of skin-texture, the best results naturally follow the application of makeup to a clean and well-conditioned skin Therefore, the first step in the application of any makeup should be a thorough and scientific cleansing of the skin The exact methods of cleansing vary according to the type and condition of the skin in some cases, simply washing with soap and water is all that is needed, in others, various cleansing creams are necessary In applying makeups to men, the first requirement naturally is that the face be freshly shaven.

In cleansing the skin, always use a cleansing cream that is prepared from oils which penetrate deeply, so that the pores of the skin are not closed with any foreign matter which would either show on the surface, or cause a blemish later. In using the cream, do not rub the skin violently in all directions pat it in Then massage gently with the finger-tips, taking care to always rub upward, so as not to cause the muscles to sag This method of application is in itself of great benefit to the skin the patting brings to the surface a flush of blood which stimulates and invigorates the entire skin structure, the gentle massage flexes the tiny muscles, and helps them to retain their all-important elasticity In this connection, please remark the fact that patting is at all times preferable to rubbing in the application of cosmetics Not only is the ultimate effect upon the skin better, but the immediate result in the makeup applied, as well

After the cream has been well patted into the skin, great care should be exercised in removing it The best material for this purpose is a very soft cleansing tissue These are cheap, so do not use them sparingly It is false economy to try to make one tissue do the work of two or three, tissues saturated with cream cannot clean completely, and are likely to injure the skin In using them be sure that your movements are always upward, with large, firm strokes from the corners of the mouth up to the outside corners of the eyes, and back and forth across the forehead

The next step is to wash the face thoroughly with a good facial soap and warm (not hot) water, being careful to rinse the face thoroughly Most reputable facial soaps of today are satisfactory for this, as they contain good oils, and do not dry the skin

The next step depends upon the type and quality of the skin The pores which have been opened in this cleansing process, must be closed before the application of the grease-paint The exact means differs, accordingly as the skin is naturally dry or oily If the skin is dry, I do not advise the use of an astringent Ice, in most cases, will answer the purpose satisfactorily If, however, the skin is naturally oily, an astringent should be used, as it will help to correct this fault In applying the astringent, place a few drops in the palm of one hand, and then pat it into the skin with the finger-tips of the other hand The skin should now be in perfect condition, and ready for the actual base of the make-up—the grease-paint

Here we must begin to consider the shade of makeup required by the individual and the part, as well, too, as by the type of film to be used Except in special instances (such as an extremely tanned woman or a pale man), it is axiomatic that men require a darker makeup than do women Likewise, when faster film is used, a darker makeup is required for both men and women Since most amateur cinematographers use regular Panchromatic film, we had best base our study of makeup upon the requirements of this emulsion For regular Panchromatic film, therefore, the normal makeup for women is based on the No 24 grease-paint, and that for men upon the No 26, which is two shades darker When Super-Sensitive Panchromatic film is used, we must move down the scale two shades more, using a No 26 grease-paint for women, and No 28 for men In this way, the makeups will not only be satisfactory in themselves, but will balance with each other if (as is so often the case) the regular "Pan" is used for exterior scenes, and the "Super-Pan" for the interiors In every case, of course, it must be understood that only the Panchromatic" type of makeup products should be used.

In applying the grease-paint, begin by placing it all over the face in tiny dabs, so that the face appears to be covered with large freckles Grease-paint should not be used prodigally, for too much will spoil the makeup Once the grease-paint has been put on the face, the hands should be cleaned of all traces of grease-paint Then moisten the fingers in cool water, and, with the fingers still moist, begin to spread the grease-paint with the finger-tips The movement of the fingers in this should be upward, and from the center of the face outward The finger-tips should at all times be kept moist, as the makeup must be carefully and evenly blended Now pat the grease-paint in with the balls of the fingers until every tiny streak is eliminated, and you have a smooth, thin coat of makeup over the entire face It is most important, of course, that the edges of the makeup—around the throat, back of the neck, and the hair-line, be extended far enough so that the camera does not reveal the end of the makeup In the case of women, the shoulders, arms, hands, and other exposed portions of the body should be made up with liquid makeup and carefully blended with the grease-painted face. The application of this should be started at the neck, where the face makeup stops It is applied with a stroking motion, then rubbed one way only until dry

With the grease-paint properly applied, you have your face ready for what I sometimes call the "trimmings." These are the various applications to lips, eyes, eyebrows, eyelashes, etc, which combine to build the expression and character of the face As I stated at the start of this article, these form a separate division of makeup, and so I will consider them in a separate article After they have been applied the powder should be, and the powder merits consideration here, as it is complementary to the grease-paint

It is the powder which completes the smooth, even skin-texture which the makeup is intended to supply The exact shade of powder to be used should be, in the case of brunettes, the same as that of the grease-paint, in the case of blondes, one shade **darker** than the grease-paint That is, taking our basic shade for regular Panchromatic film, No 24 grease-paint for women, No 24 powder for a brunette, and No 25 powder for a blonde

In applying the powder, the first movement is to dust evenly (patting, of course) a heavy coating of powder all over the face, covering the lips, patting over the eyelids, and patting carefully over the hair line If there are wrinkles around the eyes, pat again over them, drawing the wrinkles apart Now that this has been done continue patting all over the face until the grease-paint has absorbed all the powder it can Next

(Continued on page 35)

Selecting Your Subjects

by **HAL HALL**

AFTER viewing many thousands of feet of amateur films this writer has come to the conclusion that a very large number of 16 millimeter enthusiasts are wasting most of their film, and, at the same time, must be spoiling a great deal of the pleasure that they might derive from their picture making. Perhaps, this is why you see so many used 16 millimeter cameras and projectors on the market. Apparently, they are purchased as a new toy, the user looks at his film on the screen a few times—then decides that he doesn't want to play with it any longer.

This writer would not blame some amateurs he knows if they did become disgusted and quit the rather expensive pastime of motion picture making, especially, after they look at some of the intelligently-made pictures that many of our amateurs produce.

The chief fault with most of these "snap-shooters," as we call them, is that they do not seem to give any thought to the selection of the subjects to be photographed. One of the writer's friends returned from a trip to Bermuda recently. He brought back many hundreds of feet of film that he had shot both in Bermuda and on his journey across the continent. "There," he exclaimed, when the last scene had flashed across the screen, "I guess that covers my trip pretty well." We agreed with him, because to have done otherwise would have broken his heart. But about two weeks later he dropped into our office and said that he guessed he wasn't much of a picture maker. It seems that he had just seen three rolls of film from Bermuda, which a friend of his had made. Our friend didn't know that there were such scenes in Bermuda as his friend had photographed.

My friend had merely aimed his camera at the usual scenes which the majority of unthinking beginners shoot and had forgotten to look for the unusual scenes which may be found if one is willing to spend a little time searching. For example, my friend had a lot of scenes at the wharf showing crowds of people landing from the boat. He had other scenes of the principal street in Hamilton. He had long shots and panoramic shots of lily fields and shots of the band playing on the lawn of the Bermudiana hotel. All good enough in their way; but his friend had spent a little time picking his shots. He had gone out with an eye for human interest and he found it, not among the crowds of tourists, but in the home and on the little farms of the inhabitants of that beautiful garden spot. Intimate closeups of natives at work and at play, shots of native homes, made from intelligently thought out angles, and framed with an eye to composition: these were among his scenes. And then, there was a shot showing a policeman directing traffic, the "traffic" was one man on a bicycle. The unfortunate cyclist turned the wrong way and received as tough a bawling out as do we when we make a left turn on a crowded city street in the face of a sign forbidding it.

My friend's friend had photographed some of the beauty spots in kodacolor. And there are some gorgeous scenes in Bermuda. He had hunted out the best and had photographed them with rare ability and thought. He had a close shot of a banana tree in bloom—this in kodacolor. He had another shot of a man and wife arguing in front of a liquor store. The wife apparently won, for the couple marched angrily away without the man's entering the store. The photographer must have had a keen sense of something or other, for he apparently waited for further developments. The next scene showed the same husband approaching the liquor store alone. Furtively, he glanced over his shoulder and then ducked inside the store. When he came out he had a package under his arm and a smile on his face. Just a little human-interest touch that gives a real laugh. These are just a few examples of getting shots that will be worth while when the trip is ended and the picture is cut and titled and ready to show to your friends.

As an example of worthwhile amateur picture making, I might point out the work of another friend who was on a trip down in Africa. Like most amateurs, he photographed hither and yon and had just another mess of shots that really meant little. Then he decided to get serious for a while. He went inland and found a native village. There he arranged with the head man to make a record of how they lived. He started out in the morning and carried them through the day with the result that he has one of the most interesting and worthwhile pictures I have seen. His picture really is good enough to be used to great advantage as an educational subject, and schools would find it a valuable addition to their film libraries.

During the Olympic Games which recently closed in Los Angeles, a number of my friends shot hundreds of feet of film. It is amazing to see the different results obtained. Some of them used but little film but secured a remarkable record of the games. Others "just shot" hundreds of feet which means but little. O course, the big crowds were a real part of the event, but some of my friends seem to have devoted more footage to rapidly moving panoramic shots of the crowds than to the actual athletic events which really were the games.

The same is often true in photographing football games in the Autumn. So many amateurs devote so much time to photographing crowds that they miss the exciting plays that are really worthwhile. If you are at a Harvard-Yale football game it would seem that the thing to photograph would be the game. Crowds may be seen anywhere and any time. But if a dinky little quarterback breaks through the entire opposing team and dashes eighty yards for a spectacular touchdown—that is the thing that will thrill you later when you throw your picture upon the screen.

Some amateurs go to the most beautiful of our National Parks and come home with a lot of film showing the auto camps and the camp restaurants and panoramic shots of the park that have been made with so little care that you think these parks are merely auto camps and eating places. While others bring out the most beautiful examples of photography one would ever hope to see. Only recently I had the opportunity of seeing two such amateur films. One was the messy sort and worth nothing. The other was an inspiration and a delight to the pictorial eye. One man had photographed the geysers in Yellowstone Park. On his film they were just geysers. The other had photographed the same geysers. And what pictures he had made! He waited until he had beautiful cloud banks in the background, and as the geysers spouted and formed their magnificent effects they were enhanced by the simply gorgeous cloud backgrounds. One man had used filters to good effect. The other didn't use filters, and at times was out of focus. In years to come the man who made the fine pictures will continue to enjoy them and so will his friends. But the other amateur will soon toss his pictures into the ash can—and probably will relegate his camera to the cellar or store room.

There is so much that can be done with the 16 millimeter camera, so much that can be secured that will make the amateur happy, that it is a constant wonder to me why more of the amateurs do not plan out their shots and make pictures of which they will be proud.

Morganacolor

by **WILLIAM STULL, A.S.C.**

THE recent introduction of the Morganacolor process for 16mm natural color cinematography has aroused considerable interest among both amateur and professional cinematographers—and also no little confusion as to the relationship between the new process and the established ones, and as to its purpose. According to its sponsors, the Bell & Howell Company, however, there is really no conflict between Morganacolor and the already well established Kodacolor process, for which Bell & Howell have long been licensees. The truth of this statement is clearly seen when one examines the two processes critically, and makes practical tests of the two.

Before discussing this, let us recapitulate, and consider the principles of natural color photography. There are, it will be remembered, but two basic types of color-film process: additive, and subtractive. In the subtractive processes, the color is actually in the film, in the additive processes, the film is itself a more or less conventional black-and-white film, taken and projected through special filters which synthetize a colored image upon the screen. The professional processes—Technicolor, Multicolor, Magnacolor, etc., are subtractive, the amateur processes—Kodacolor, Vitacolor, and now Morganacolor, are additive. Each of these types has distinct advantages and disadvantages; briefly, the subtractive processes make for greater simplicity in projection, but introduce serious complications in the laboratory processing, while the additive processes add some degree of complication in projection, but allow conventional methods of processing the film.

Further than this, all color processes may be classified with respect to the number of colors used to form the completed color-image. It is well known that white light is composed of rays of every color, and that it can be synthetized by combining rays of three or four primary colors—generally red, blue, green and yellow. Natural-color cinematography makes use of this fact by making (in one way or another) separate pictures of the subject through filters excluding all rays but one of these primary colors and then projecting the pictures through filters of the proper primaries. In this way, not only may pure white light—the combination of all the primary colors—and its opposite, black—the total absence of any light—be produced, but also the color-effects of the primary colors and of many of their combinations, such as orange (yellow and red), violet (blue and red) and so on. Now, the perfect color process would be one employing **all** of the primary colors; but this would introduce a vast deal of complication. Therefore, it has been found possible to achieve very creditable effects with but two or three colors. Naturally, of course, the fewer colors used in synthetizing the completed color-image, the less perfect will be the coloring of all but objects of the exact colors used, in some cases, there will be colors which cannot be reproduced at all (vide, orchid, which cannot be photographed successfully in Technicolor), while in a number of other instances, the rendition of some colors will be false. Likewise, using but a part of the components of white light, the rendition of white will inevitably be imperfect.

All of the professional color processes to date have been two-color processes—Technicolor, Multicolor, Magnacolor, Prizma, Kinemacolor, and the like, with the exception of the long-forgotten Gaumont process, which is a three-color one. Kodacolor, the leading amateur process, on the other hand, is a three-color process. Morganacolor is a two-color process.

This brings us back to a consideration of the two amateur contenders. In order to understand their relationship, we must first have a clear mental picture of how each works.

Kodacolor is a three-color, additive process. It is made with a special tricolor filter, having parallel segments of blue, green and red. A special film is used with this process, a film which is reversed in the camera, being run with the emulsion away from the lens rather than toward it. Embossed in the celluloid base of the film are tiny cylindrical lenses, microscopically narrow, but running the entire length of the film. These tiny lenses split the image cast by the camera's lens up into tiny vertical strips, corresponding to the strips of the vertical Kodacolor filter-segments. When the film has been reversed into a positive, it is run through a projector fitted with a similar filter, and the tiny lenses on the film, in conjunction with this projecting filter, re-form a colored image on the screen. The color rendition of this process is practically perfect, but it is limited by the fact that, since the optical system is necessarily an interlocking system, only a special 1-inch f-1.9 lens may be used in either taking or projecting. Due to the density of the filters, the speed characteristic of the Kodacolor system (even with the new Super-Sensitive Kodacolor film) is extremely low, and the projection is limited to a relatively small screen.

Morganacolor, on the other hand, is a two-color, additive process. It is made with a special Filmo camera, equipped with a mechanism which alternates a red and a green filter in front of the film, exposing one frame through each filter. These filters may be removed if it is desired to use the camera for either black-and-white or Kodacolor work, and they may likewise be changed at will to compensate for different types of film or light. At present, the only filters available are those for Eastman Regular Panchromatic Reversal Film, separate filters being available for both daylight and incandescent light. The film is projected through a special Filmo projector, which is equipped with a rotating color-wheel in front of the lens, and fitted with projection-filters complementary to the taking filters. In order to minimize the color-flicker (technically known as "color bombardment"), which inevitably results from this type of process which depends upon persistence of vision for synthetizing the complete color-image, the projector is operated at the high speed of 72 frames per second. But, in order to conserve film, a most ingenious movement has been developed, which, while in effect projecting at 72 frames per second, actually passes but 24 frames per second past the aperture. This is done by moving the film both ways down two frames, then up, one frame, and projecting each frame three times. This eliminates color bombardment, but cannot eliminate another inherent liability in this type of process: fringeing. It can be clearly seen that if a motion picture is made of a rapid movement, moving across the picture, and fairly close to the camera, the displacement of the object between one frame and the next will be relatively great. Now, if one of these images is projected through a green filter, and the next through a red one, the two images will not completely "register" one on top of the other. Since the displacement will be magnified, too, in the projection, it will be more noticeable. Therefore, on such rapid movement close to the camera, you will always get a colored fringe around the moving object—green on one side, red on the other, while in the centre, where the two images do overlap, you will get a proper rendition of the object's color. The rapidity of projection in Morganacolor minimizes this fringe, but cannot altogether eliminate it.

Since the color-forming components of the Morgana process are not in any way dependent upon the optical systems of taking and projection, it can be seen that any lens desired may be used in either photographing or projecting Morganacolor films. Since the film itself is not a part of the optical system, duplicate positives may also be used quite success-

fully in projection Since the filters are relatively light, the speed factor is comparatively high, while the size of projection is practically unlimited On the other hand, being a two-color process, the color effects cannot be in any way comparable to those of a three-color process

To summarize the matter Kodacolor is a three-color process, giving practically perfect results at the cost of speed, projection-size, and interchangability of lenses; Morganacolor is a two-color process, giving excellent results within its limits but not in any degree approaching the perfection of a three-color process It gives, however, a far greater speed characteristic, and perfect flexibility in lenses, projection, and allowing the making of duplicate prints The one is admittedly superior in color-rendition, and inferior in mechanical flexibility The other is admittedly inferior in the perfection of its color-rendition, but vastly superior in its mechanical applicability

Now, what are the purposes of the two?

Kodacolor is primarily an amateur process The small projection-size imposed, and the impossibility of making commercial duplicates practically bars it from the commercial field But it is unquestionably the most perfect color process for amateur use, if one is willing to accept its mechanical limitations

Morganacolor, on the other hand, is adapted to both amateur and professional requirements It is neither able nor intended to give coloration as perfect as can be obtained from a three-color process but it is more flexible, and by virtue of its permitting the use of duplicate positives, it is eminently fitted to commercial use Morganacolor, therefore, is intended for the use of the amateur who wants to make color films with the same flexibility as is possible in black-and-white, and for the commercial field, where there is already a definite demand for 16mm color Despite the unique reciprocating movement of the film at the projection-aperature, the process is absolutely applicable to sound-on-film.

Considered strictly on their own merits, the results possible with the Morganacolor process are eminently satisfactory I have made a number of practical tests with the process, some under extremely adverse conditions, with excellent results Unlike Kodacolor, the increase in exposure necessary for Morganacolor work is relatively slight Using natural light, the increase in exposure over black-and-white (using the same film and camera) is approximately two and a half stops With artificial lighting (which is practically impossible with Kodacolor), the increase is but one and a half stops In this latter connection, one of the most interesting of my series of tests was one made, through the courtesy of Mr C B deMille and Karl Struss, A S C , on an interior set at the Paramount Studio, where Mr deMille was filming "The Sign of the Cross" Mr Struss, of course, was using Super Sensitive film, while I had to use ordinary Panchromatic but by virtue of the decidedly faster lens and larger shutter-aperture of the Morgana-Filmo, I was able to get very passable results, despite the filters used for the color process Had I been equipped with Super Sensitive film (the Morgana filters for this emulsion will, I understand, be available shortly), I should have had, beyond doubt, an absolutely perfectly-exposed picture — a feat which no other process of color-cinematography, amateur or professional, could equal

The general color-rendition of Morganacolor is excellent It reproduces all shades of red and green, naturally, perfectly and, despite the fact that it uses only these two colors, and no blue, it reproduces blue very creditably Such two-color processes are frequently very faulty in their reproduction of yellow. Morganacolor, on the other hand, reproduces this color, while by no means perfectly, at least creditably Its yellows and oranges, while far from true, are at least recognizable, though somewhat greyed Both by natural and artificial lighting, it gives beautiful flesh-tints, and almost perfect whites

The making of Morganacolor films is by no means difficult The camera is, aside from the special filter-alternating mechanism, a standard Filmo, with the speed-control of a 70-D, but without the turret lens-mount It is operated at a speed of 24 frames per second, in order to minimize the fringe, it may in certain cases be operated at slower speeds, though this is not advisable, and it may, of course, be operated at considerably higher speeds Any lens may be used, from a 15mm up to the most powerful telephoto The best results, naturally, are to be had with lenses that are well corrected for color The speed of the lens is no more or less important than in the case of black-and-white work. the slower lenses will, of course, prohibit the making of color pictures under adverse conditions Like any standard Filmo, the Morgana camera can be used in the hand, although, of course, the best results naturally follow the use of a tripod Due to the unavoidable tendency toward fringeing, it is not advisable to pan or move the camera quickly However, good cinematographers always avoid moving the camera wherever possible As remarked before, rapid movement across the camera tends to produce fringeing, but ordinarily movement is permissible Even comparatively rapid movement is possible if the subject is beyond ten or fifteen feet from the lens Rapid movement in closeups, of course, is always objectionable, whether in black-and-white or color Every type of lighting possible in black-and-white is possible in Morgana, but, as in all color processes, a fairly flat, front light is the best As in most color processes, the question of exposure has a definite bearing on the color-rendition; over-exposure is highly objectionable and a slight underexposure is in every case preferable The best results, of course, follow the use of an accurate exposure-meter

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The Elements of Make-up

(Continued from page 32)

take a soft powder brush and, starting at the forehead, brush from the center of the face, out, until all of the superfluous powder has been brushed from the face Next, take a cleansing tissue, dampen it, and clean the powder out of the eyelashes, the corners of the eyes, and over the eyes, just by pressing gently Now clean the powder from the lips with the tissue, and, with your finger, go over the lips with a little more rouge Take the eyebrow brush and brush the powder from the eyebrows Then you are ready for the camera

While you are working before the camera, it will frequently be necessary to repowder, in order to preserve the velvet-smooth surface of your makeup Do not, however, make the mistake of over-powdering, as many professional players do It is always well to glance into a mirror to check on your makeup before each scene—but do not feel compelled to repowder each time you do so

Grease-paint—and all other makeup, for that matter—may be removed by a liberal application of cold creams, followed by a liberal massage, to dissolve the grease-paint The cream should, of course, then be removed with a cleansing tissue Finally, wash the face well with warm water and plenty of soap, followed by a cold-water rinse Liquid makeup, incidentally, requires only this latter soap-and-water treatment for removal

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"Where picture-folks meet for good things to eat"

Roe's Tavern

6100 SUNSET BLVD. HOLLYWOOD

Concerning Cinematography

(Continued from page 20)

France, but its nature is most correctly described by its main title, which calls it 'Une etude cinematographique'—a study in cinematography For this, Mr. Edward Tisse, who will be remembered for his photographic achievements in the other Eisenstein films, deserves unusual credit Every scene is superlatively beautiful Since the sound-track of the picture—a song—is entirely in Russian, it is Tisse's photography that carries the picture; and it is significant that at every showing of the film during its four weeks' run at the Filmarte theatre in Hollywood the audience greeted its close with a storm of applause We have heard a great deal about Mr. Eisenstein, but not nearly enough about that tall, silent Scandinavian, Edvard Tisse, who has done so much to make Mr. Eisenstein's productions the noteworthy things they have been When he visited Hollywood a few years ago, Tisse made many friends among the A S C ; and this picture has strengthened their esteem for this great artist

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DOCTOR X

◆ Expertly Technicolored by Ray Rennahan, this picture is a further—and convincing—argument for the use of more color in feature productions The less said about the story and direction, the better, except for some execrable "comedy relief," these are no better nor worse than the average horror-melodrama it is Technicolor and Rennahan's photography alone which make the picture notable It is to be hoped that more producers will follow Warner Bros.' example, and decide to make their mystery pictures in color, and entrust the photography to Rennahan—or some equally expert color-cinematographer

MY PAL, THE KING

◆ This Tom Mix Western is another of the four pictures which Universal has seen fit to release minus all screen credit to the photographer On the face of it, this is a glaring injustice to Daniel B Clark, A S C, the cinematographer in question. But after having seen the picture, I am convinced that Universal unwittingly did Clark a favor in not permitting his name to be connected with the picture, for "My Pal, The King" is a quickie of the quickies It seems incredible that any major producer should have the supreme effrontery to present one of their major stars in so shoddy a production There is a great idea in the story—but it does not reach the screen I do not believe that there was a single new set built for the production; certainly I saw and recognized many dating back to the long-dead days of "The Hunchback of Notre Dame" Even Dan Clark's best efforts could not make this film look like anything more than it is—a quickie, made strictly for the purpose of exploiting a popular star while the exploiting is good It will make money on the strength of Mix's name, I suppose, but not nearly as much as it would if it had been produced in a manner commensurate with the star, and with the basic idea of the story

GUILTY AS HELL

◆ Here again we see Karl Struss, A S C, working in his 'Jekyll and Hyde," or realistically unpictorial mood His work is effective throughout, but impaired by a technical abuse which seems inconceivable in Struss, or in a director who, like Erle Kenton, is a former photographer. Time and again big-head closeups are made with a 25 mm. lens—frequently dollying into the closeup from a long-shot The result is atrocious- so distorted as to make the player appear principally nose, with a small, absurdly tapering head somewhere in the background. The first time this trick is used—during a third degree sequence—it is effective, and almost legitimate, but once in a picture should have been enough Instead, Kenton and Struss cast good taste to the winds, and use it continually They should have known better

Dyer Covers Olympic Games

ELMER G DYER, A S C, claims the distinction of being the only production cinematographer to photograph the entire Olympic Games Mr Dyer was in charge of a special camera crew engaged by the well known French director, E A Dupont, to make a complete photographic record of the games. Associated with Mr Dyer at different times during the making of this film were such outstanding cinematographers as Jackson Rose, A S C, Charles Stumar, A S C, and Harry Perry, A S C Between them, they covered every event of the Olympiad, and exposed more than 43,000 feet of films to do so.

"It was a most interesting experience," says Mr Dyer "The thrill of a lifetime But it was real work, at the same time! I can surely sympathize with the newsreel men now We had to be, it seemed, in three or four places at once—up in the press box at the top of the stadium, down on the field recording the different events, getting closeups of the winners at the Victory Ceremonies, over at the swimming stadium photographing the aquatic events—and almost everywhere else Working in a crowd of a hundred thousand people isn't easy, either, whenever we wanted to move the cameras, we could be sure of having to shoulder our way through a few hundred tightly packed spectators Once, the crank of my camera, as it was being hurriedly carried out by my assistant, Jimmie Williamson, became entangled in the neck of an ice-cream vendor Yes—we carried the chap with us, and got our shot! We also got some ice cream and a good old American Razzberry from the crowd

"I hadn't imagined that there could be so many amateur still and movie photographers in the world They were everywhere—and fully half of them came around to us for advice on exposure, focus, film, filters, angles, and everything else from here to breakfast We really enjoyed talking shop with them—except when they started to talk just as we were about to move to the other end of the stadium to get a shot in a hurry!

'We used both Akeley and Mitchell cameras, and every possible lens from a 1" to a 17" The latter, by the way, were extremely useful in getting 'candid camera' shots of the crowd in the stands Photographically speaking, we handled the job exactly as though we were on production, using Super Sensitive film and moderate filters—usually the Aero 2 and G The results were beautiful—especially the slow-motion shots we made of the diving

"But I'd rather not try it again—concentrating on photography during the finals was an awful strain We had followed all of the events through the elimination heats—and watching the finals, knowing that each contestant was a champion, and all of them the world's best, well, it was almost impossible to concentrate on the camerawork

"The newsreel fellows are a wonderful bunch We worked together perfectly, borrowing each others film, lenses and lunches as freely as though we were brothers And, like brothers, how we would bawl each other out when we got in each other's way!"

◆

Talking Picture on Forest Fires

A SHORT talking picture entitled, "Forest Fires—or Conservation?," sponsored by the Forest Service, and designed for use during the fire season in the Northwest, has just been released by the U S Department of Agriculture This film shows the Secretary of Agriculture, Arthur M Hyde, presenting to Congressman Scott Leavitt, of Montana, a commission as a Volunteer Fire Warden in his state and presents Mr Leavitt in a short talk on the importance of forest conservation, illustrated by various scenes exemplifying forest resources and the destructiveness of their arch enemy, fire

This film, three-fourths reel in length, may be obtained from the Office of Motion Pictures, U S Department of Agriculture, Washington No rental is charged, but the borrower is required to pay transportation charges

Here and There in the Industry

35-HOUR WEEK?

◆ Joseph M Schenck is reported in one of the trade papers as predicting a 35-hour working week in the Hollywood studios Says that producers are considering this plan from an economic point of view, and as a means of restoring prosperity Says studios will have to run on a two-shift basis if this policy goes into effect Might be a good idea if more men are employed

LIKE FATHER, ETC.

◆ When Rin Tin Tin died recently it looked as though Nat Levine's plans for four features with the famous dog in the top spot would be shattered However, Rin Tin Tin, Jr, has inherited his father's ability and is stepping into the dog role in this series which will be released by Mascot

SPEED

◆ Director James Cruze has just set a new record at Columbia where speed has long been in evidence He completed the shooting of "Washington Merry-Go-Round" in sixteen days What a difference from the old silent days when a six to nine week schedule was considered perfectly okay.

MAMOULIAN TO EUROPE

◆ Rouben Mamoulian, Paramount director, who has made an enviable reputation in the short time he has been in pictures, has left for a vacation in Europe He plans to visit England, France, Germany and Austria before he returns in late October to resume work at Paramount

KERSCHNER TO TAHITI

◆ Glenn Kerschner A S C, and Director Irvin Willat, have gone to Tahiti where they are to secure scenes for Universal which will be used in connection with the making of the picture, "Black Pearls"

2000-FOOT REELS

◆ The Academy of Motion Picture Arts and Science is trying to put over a plan whereby release prints will be on 2000-foot reels instead of 1000-foot reels as at present This is for the purpose of saving wear on films by so much handling Some of the big eastern exhibitors are said to be favoring the idea

◆

Consolidated Opens New Plant

A NEW $2,000,000.00 plant has been opened by Consolidated Film Industries, Inc, on Main Street, Fort Lee, N J It is called Consolidated Park The new plant will have an annual capacity of more than 1,000,000,000 feet of release printing Safety features endorsed by the government and insurance authorities furnish the highest possible protection for life and property There is a large research laboratory with a staff of skilled technical engineers

◆

Negative Exports Increase

A MARKED increase in the shipment of negatives abroad and having the positive prints for foreign release made there is shown in the past six months according to government reports During the first six months of this year a total of 6,553,734 feet of negative sound film was shipped as against 5,488 917 in the same period last year or an increase of about 20 per cent The United Kingdom was the leading market, receiving 2,815,323 feet

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EQUIPMENT PRIZES . . .

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AMERICAN CINEMATOGRAPHER

$1,000.00

Amateur Movie Contest

In addition to the four cash prizes, announced on the opposite page, the following prizes will be awarded by various equipment manufacturers and dealers:

The BELL & HOWELL COMPANY will also present two equipment prizes—First, a choice of a Filmo 70DA Camera, listed at $280 00, or a Filmo Model J L Projector, listed at $298 00 Second, a choice of any Standard Cooke Telephoto Lens, priced from $60 00 to $95 00 To be given to prize winners who made their pictures with a Filmo The EASTMAN KODAK CO will present a Model K Cine Kodak, with a f. 1 9 lens, complete with carrying case, priced at $150 00, for the finest example of photography in an out-of-doors picture regardless of whether it wins a cash prize or not and without consideration of story subject MAX FACTOR MAKEUP STUDIOS will present one of the famous Max Factor Make-up Kits, completely equipped, to the winner of first prize of $500 00 HOLLYWOOD FILM ENTERPRISES, INC., offers a Model 8 Cine Voice, Home Movie Talking Picture Machine, complete with carrying case, priced at $129 00, to be given to that person or Amateur Club, located in California, who enters the best 16 mm. or 9½ mm. picture from California, regardless of whether the picture wins a cash prize or not In other words, the prize goes to California's best entry This home talkie equipment may be attached to all projectors, either 16 mm. or 35 mm It makes any projector a talking picture machine HOME MOVIE SCENARIOS, INC., offers two prizes as follows: To the winner of first prize of $500 00, one Scenario (choice of entire group), one H M S Matte-box, choice of any H M S Filter, and one H.M S Scene Slate To the winner of second cash prize of $250 00, one H M S Matte-box and choice of any H M S Filter In case the picture winning first prize is made from an H M S Scenario, an additional cash prize of $100.00 will be paid by Home Movie Scenarios, Inc If second prize is made from an H M S Scenario, an added prize of $50 00 will be awarded; and an added prize of $25 00 will be given winner of third prize if made from an H M S Scenario METEOR PHOTOLIGHT COMPANY will present the winner of FOURTH cash prize the following valuable lighting equipment A Meteor Double Photolight complete with two 500 watt NERON bulbs, retail price, $30.00, a Meteor Photolight Tripod model, complete with NERON bulb, retail price, $18.00, and a Meteor Photolight Table model, complete with bulb, retail price $13 50. Value of prize, $61 50

AND—MORE PRIZES WILL BE ANNOUNCED

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YOUR OPPORTUNITY!

The AMERICAN CINEMATOGRAPHER now offers the greatest opportunity ever given the AMATEUR MOVIE MAKER to win recognition and cash. ¶ A total of **$1,000.00** in **CASH** prizes is offered by this magazine to the winners of the Amateur Movie Making Contest announced in the October issue. This contest is sponsored by the American Society of Cinematographers, an organization composed of the world's leading professional motion picture cameramen. If you want to win recognition, as well as cash, read the rules below and send your entry. (See opposite page for additional equipment prizes)

COMPLETE RULES OF THE AMATEUR MOVIE MAKING CONTEST

The American Cinematographer will present a prize of $500 00 for what its judges consider the best 16 millimeter or 9½ millimeter picture submitted in this contest $250 00 will be given as second prize, $150 00 as third prize; and $100.00 as fourth prize, a total of $1000 00 in prizes.

This contest is open ONLY to AMATEURS No professional cinematographer will be eligible to compete. It is a contest solely for the amateur, either the individual or the club.

The contest officially opens November 1, 1931. The contest ends at midnight of October 31, 1932 All pictures must be entered by the closing date or they will not be considered. Entries mailed or expressed bearing the date of sending will be accepted if they reach THE AMERICAN CINEMATOGRAPHER office after October 31, 1932, providing the date shows they were sent before midnight of October 31, 1932.

Pictures submitted in this contest will be judged upon photography, composition, direction, acting, cutting and entertainment value And only silent pictures will be eligible for the contest The judges, whose names will be announced later, will include outstanding and widely known Cameramen, Directors, Actors, Writers and a group of nationally known Motion Picture critics from some of the best known newspapers in America.

The decision of the judges will be absolutely final, and there can be no appeal from their decision Announcement of the awards will be made as soon after the close of the contest as possible and checks will be mailed the winners

Pictures may be submitted either by individual amateur movie makers, or they may be submitted by Amateur Movie Clubs However, they MUST BE photographed on 16 millimeter or 9½ millimeter film Accompanying each entry must be a sworn statement to the effect that no professional cinematographer assisted in the making of the picture. No pictures will be accepted which were photographed on 35 millimeter film and then reduced to 16 millimeter.

This contest is open to amateurs and amateur clubs anywhere in the world, with the following conditions

Only Bona Fide Subscribers to the American Cinematographer Can Compete

If you are a paid-up subscriber to THE AMERICAN CINEMATOGRAPHER you are eligible to enter the contest. If you are not a subscriber just send in your check for a year's subscription and you are eligible.

In the case of Amateur Clubs the following rules apply:

If a club with a membership of 20 or less wishes to enter a picture, the club will have to have a minimum of 5 subscribers among its members Any club with more than 20 members will have to have a minimum of 10 subscribers among its members. For any further information you may desire, write the Editor of the American Cinematographer, 1222 Guaranty Building, Hollywood, Calif., or consult your photographic supply dealer

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American Cinematographer, 1222 Guaranty Bldg , Hollywood, Calif.

Enclosed please find Check, or Money Order, for $3.00 ($4 00 foreign) for which kindly enter my subscription to THE AMERICAN CINEMATOGRAPHER for one year:

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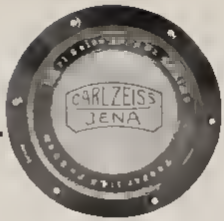

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A New Exposure Meter

LIGHT intensity measurement has been placed on the same basis as the measurement of amperes or volts by the Weston Electrical Instrument Corporation, using their newly developed Photronic Photoelectric Cell. The latest use to which they have placed this electric eye, is a Universal Exposure Meter for photographic use, in which brightness measurements are taken directly from the scale of an instrument easily read by the layman.

This Exposure Meter is scientifically designed to give accurate exposure information for both "stills" and "movies." It consists essentially of two parts, (1) an electrical instrument operating from two Photronic Photoelectric Cells located in the back of the meter and (2) a simple, novel mechanical calculator for translating the brightness measurements into proper apertures and shutter timings for any plate or film speed. It is always ready for use as no batteries are required and no adjustments necessary. It is independent of climate conditions and intensity of light.

◆

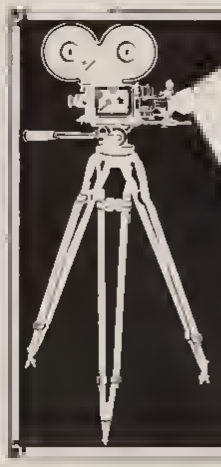
Academy Appointments

APPOINTMENTS of leading motion picture technicians to head sub-committees of the Research Council of the Academy of Motion Picture Arts and Sciences, to carry out projects instituted at its first meeting last month are announced by Darryl Zanuck, chairman.

The chairman of the groups and the subjects they will investigate are: Virgil Miller, development of a noiseless camera for recording sound pictures; Carl Dreher, standardization of set and costume tints, John Nickolaus, uniform release print practice; W. C. Harcus, release print film processing investigation, C. Roy Hunter, film preservatives investigation, Douglas Shearer, screen quality study, E. H. Hansen, split film recording investigation.

The Academy's Research Council was organized recently as the governing body for technical investigations and standardizations within the film industry. In addition to consolidating the work of previous Academy groups devoted to technical research, the new body will investigate technical problems affecting actors, writers and directors.

The Council is composed of representatives of the technical departments of the major studios and of the acting, directing, production, technical and writing branches of the Academy.



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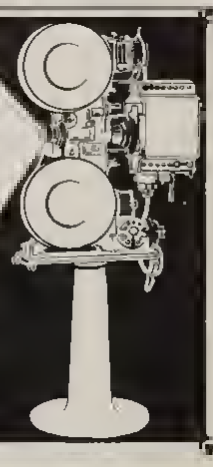

Wins Leica Camera

KARL DRAXLER, of 3511 South Olive Avenue, Burbank, California, was presented with a new Leica camera last month by the Hollywood Camera Exchange, which offered this prize for the best still photograph made in connection with the Olympic Games, which is shown above. An intensive campaign over the radio was conducted by Cliff Thomas, head of the Exchange, and hundreds of pictures were submitted in the unique contest. Mr. Draxler entered a picture of the Olympic Torch. The following statement from Mr. Draxler should be of interest to all photographers, and explains, perhaps, why his picture was of such excellent quality.

"When I went to the great Los Angeles stadium and saw the Olympic Torch—blazing for the first time in California," says Mr. Draxler, "I was moved by thoughts of the classic Olympic Games, which have handed down to us from the fields of Olympia this torch and symbol of high ideals by thoughts of those men of stainless character and physical perfection who met in competition gainless but for the honor of winning under the mighty Olympic oath. I was impressed by the majesty of the revival of these principles in the modern Olympic Games, and their mighty power in uniting all nations in good fellowship and brotherhood. I wished to express as best I could in a picture the sursum corda (Lift up your hearts!) symbolized by the Olympic Torch. I chose a low set-up, to portray **rsingly** the portal and torch. To strengthen the "reaching up" effect, I eliminated the basis of the portal, letting it emerge from silhouettes of flowers. I framed it with trees to link Nature and her guiding purity with man's efforts. I took it at night to have the flame register as light, uplifting and leading in the darkness."

◆

Home Movies Worry England

SINCE the introduction of panchromatic negative for subnormal camera users, the quality of home films has improved tremendously and proven itself a sales impetus.

A survey of the home movie market reveals the fact that there are now 150,000 users of home projectors in England. It is estimated that after the Christmas sales this number will be increased to 200,000.

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An entirely new projection lens that incorporates the advantages of all other 16mm lenses. The Biophors. Highly corrected. Made by the manufacturers of Bausch & Lomb Cinephors (used in the leading theatres).

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Typically Hugo Meyer in their quality, they represent an ultimate present-day perfection in the calculation and construction of wide angle cine lenses.

These lenses are furnished in mounts for Victor Ansco cameras. Turret can be reached with lens in position.

Kino Plasmat f/1.5 15 mm $60.00
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Ditto, rigid focus mount 30.00

Literature on request

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Works, Goerlitz, Germany

To Maintain 16 MM. Standard

FOR the purpose of clarifying the 16 mm sound-on-film situation, the RCA Victor Company, Bell & Howell, and the International Projector Company, leading manufacturers of sound reproducing equipment, and Eastman Kodak Company, the largest producer of sixteen millimeter film, have individually decided to maintain the present standard size 16 mm film in the production of sound-on-film motion pictures by eliminating one of the two rows of sprocket holes and by utilizing the space thus acquired for the sound track.

In maintaining this standard and by the elimination of one row of sprocket perforations, the dimensions of the picture on the film remains the same as on the present 16 mm silent film. Present stocks of silent film can be run on sound projectors for the new film. The center line of the sound track is located centrally in the space between the picture and the edge of the film, the space thus available permits a sound track .085 inches in width and suitable margins on each side of the sound track.

The standard speed of 16 mm sound film is 24 frames per second and the lead of the sound with respect to the picture is 25 frames in advance.

By maintaining the same size and position of picture on the film it becomes unnecessary to change the projector lens, to shift the projector, or to increase the candle power of the projector lamp in order to get the screen picture of the same size, brilliancy and definition.

◆

Music Negotiations

NEGOTIATIONS for the right to use American music in talking pictures produced and distributed by Electrical Research Products' producer-licensees are being carried on with John G. Paine, Agent and Trustee for a large group of American publishers according to the statement by Donald S. Pratt, Manager of ERPI's Music Rights Department.

Negotiations are also being carried on with English and Australian publishers, Mr. Pratt stated. These are being conducted between ERPI's English and Australian Music Rights representatives and Mr. Charles James Dixey and Mr. Sydney William Edwards who, respectively, act in capacities similar to that of Mr. Paine in this country.

ERPI's contracts with continental European publishers are individual ones and renewal negotiations are being conducted by ERPI's Paris office. Over 400 catalogs of music are involved in the negotiations. Of this number about 150 are American. ERPI's Music Rights Department, Mr. Pratt emphasized, is a non-profit organization maintained for the convenience of its licensees. Substantial economies in overhead costs are effected by the centralized handling of the Music Rights situation as each producer would otherwise be obliged to organize and maintain its own Music Rights Department.

◆

New German Device Speeds Television

A NEW device has been developed by the Zeiss works in Germany which is called "interfilm television."

It reduces materially the time consumed in developing motion picture film and getting it on the air. With this new invention this work can be done in 20 seconds.

Officials of the NBC state that this is one of the most important steps yet taken in the television field.

◆

Latvia Drops Quota

LATVIA has abolished its import quota, according to advices received by the Motion Picture Division of the Department of Commerce. The country is now permitted to import pictures without restrictions except for the usual censorship before exhibition.

Amateur Movie Making

(Continued from page 30)

life, and nothing so completely dates a picture as antiquated humor in the titles

The length of titles is vitally important As a rule, they should be brief; but where the title indicates a change of time or place, the length of the title should be more or less proportional to the time or space gap that it bridges Action occurring a few hours later, or in the next room, can be introduced by a title stating just that, but if months or years elapse, or the action changes half across the globe, a title bearing just that bald statement is usually on the screen for too short an interval to allow the audience to readjust itself to the change On the other hand, such titles musn't be too wordy; so a good plan is to fade out on the preceding scene, and to fade in on the following one, in extreme cases, the title itself may be faded in and out as well

The spacing of the titles is a delicate matter They cannot come too close to each other, nor should they be too widely separated In a scenic film, this spacing is relatively easy, but in a documentary or dramatic film the spacing of the titles must be considered from the beginning of the preparation of the script Moreover, spoken titles must be carefully placed so that it is clear who is speaking As a general rule, avoid cutting a spoken title into a long or medium shot unless the action or the wording makes it absolutely clear who is speaking It is always best to flash a bit of a close-up of the speaker just before and just after the title, then returning, if necessary, to the original longer shot It is not, by the way, necessary to use all of the footage photographed of an actor speaking such a title; just show a flash of him starting to speak, then the title, and then a flash of him finishing his speech The audience subconsciously gets the impression that they have seen him speak the whole title—and you save a good bit of footage

The relationship between titles and tempo is rather a bit too involved to be dwelt upon here Clearly, however, a title—any sort of a title—to some extent slows down the action Therefore, the fewer the titles, the faster the tempo, and vice versa On the other hand if you want the tempo slow, titles will help you to make it so For a slow-moving tempo, longer titles are permissible, for a fast-moving tempo, short, staccato titles are vital Above all, don't try to explain too much in a title I remember some years ago seeing a picture of the home-talent type, previewed At one point, the hero was about to be lynched, a title came on "Let's hang him in Mackintosh's old barn!" The audience roared, for the name had no significance except, perhaps, to those who had actually gone out into the country and used farmer Mackintosh's old barn as a location The two words, "Hang him!" would have told the story more effectively, and maintained the mood and tempo of the action.

The visual effect of the titles is equally important As a rule, plain backgrounds and letterings are the best, as they are the most legible Art backgrounds are attractive, it is true, but they generally take the attention away from the story Art backgrounds are legitimate for main and credit titles, for titles introducing new sequences, and for "The End" The others should be on plain cards, with no more than a dark, mottled ground at the most One very useful art title, however, can be one definitely marking a production as your product or property It may carry some such phrase as "A John Smith Production," or "From the Library of John Smith" Behind may be any type of background or conventional design you may desire, after the fashion, for instance, of Paramount's mountain-top, R-K-O's radio tower, Pathe's roster, or M-G-M's lion, or a coat of arms.

Animated or trick titles are at times useful as main titles, while double-exposure titles are likewise useful for both main and credit titles.

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Photographic Emulsions

(Continued from page 10)

experimenters had been worried by their inability to go but slightly beyond that section of the spectrum and to render all colors in their natural, tonal values Photography was always a sort of balance between two great evils, blue objects that reproduced too white and red ones that were rendered too black

This difficulty has been overcome in the so-called panchromatic emulsion, which marks off the latest period in the development of photography This emulsion is a modification of the ordinary gelatin emulsion, formed by incorporating in it particular elements which increase the sensitivity over the troublesome parts of the spectrum, particularly the red portion

The latest development of this product exalts our idea of the beauty and dignity of scientific research, and induces speculation as to how much further it may be developed It possesses a sensitivity never anticipated by the most sanguine workers; it embodies the revolutionary idea of a tinted base which greatly reduces the evils of halation, it has made possible every known process of natural color photography

An interesting comparison between the speeds of the various emulsions may be found in the following table

Niepce's Asphaltum Process	8 hours' exposure
The Daguerreotype	1 hour
Talbot's Calotype	3 minutes
Collodion Wet Plate	10 seconds
Collodion Emulsion (dry)	15 seconds
Early Gelatin Emulsion	1/15 second
Modern Emulsion	1/55 second

The above, under similar light conditions, at stop f/16

Reversal Process

The popularity of the sixteen millimeter film suggests the subject of the reversal process, or more correctly, direct positive, a process not generally understood It is also involved in the operations of various color processes In the case of the miniature film, it is designed to reduce the double cost of negative and positive, and to furnish only the single positive The procedure depends upon the character of particular chemicals, such as potassium permanganate, potassium bichromate, and persulfate of ammonia These chemicals have the power of reducing the metallic silver, but have no effect on the unexposed compound in the emulsion

Reference to these chemicals again reverts to the peculiarity of hypo which has just the opposite function, that of dissolving the unexpected silver salts without attacking the free silver

In conclusion, it must be acknowledged that no claims to originality are here intended The paper results from the author's impulse to express something of the beauty, romance, and drama of photography not generally reflected in prosaic text-books and scientific disquisitions, but which are certainly inspired by a study of the developments of that fascinating combination of art and science

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California Camera Hospital, 321 O T Johnson Bldg, Los Angeles Calif
Central Camera Co, 230 So Wabash Ave Chicago, Illinois
Crowley Milner & Co, Motion Picture Dept, Detroit Mich
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Detroit Camera Shop, 424 Grand River W Detroit, Mich
E M F Electrical Supply Co, 430 Massachusetts Ave, Cambridge A, Mass
Gillette Camera Stores, Inc 117 Park Ave, New York City, N Y
The Gross Photo Supply Co, Retail Dept Toledo, Ohio
Edwin A Hahn, 223-225 Columbia St Utica N Y
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Harvey & Lewis Co, 1503 Main Street, Springfield, Mass
Harvey & Lewis Co, 513 Main St, Worcester, Mass
Herbert & Huesgen Co, Motion Picture Dept, 18 E 42nd Street, New York City N Y
Hirsch & Kaye, 239 Grant Ave San Francisco Calif
Hollywood Camera Exchange, 1600 Cahuenga Ave, Hollywood, Calif
Hollywood Citizen, Camera & M P Dept, 6364 Hollywood Blvd, Hollywood, Calif
Hollywood Film Enterprises Inc 6038 Sunset Blvd Hollywood, Calif
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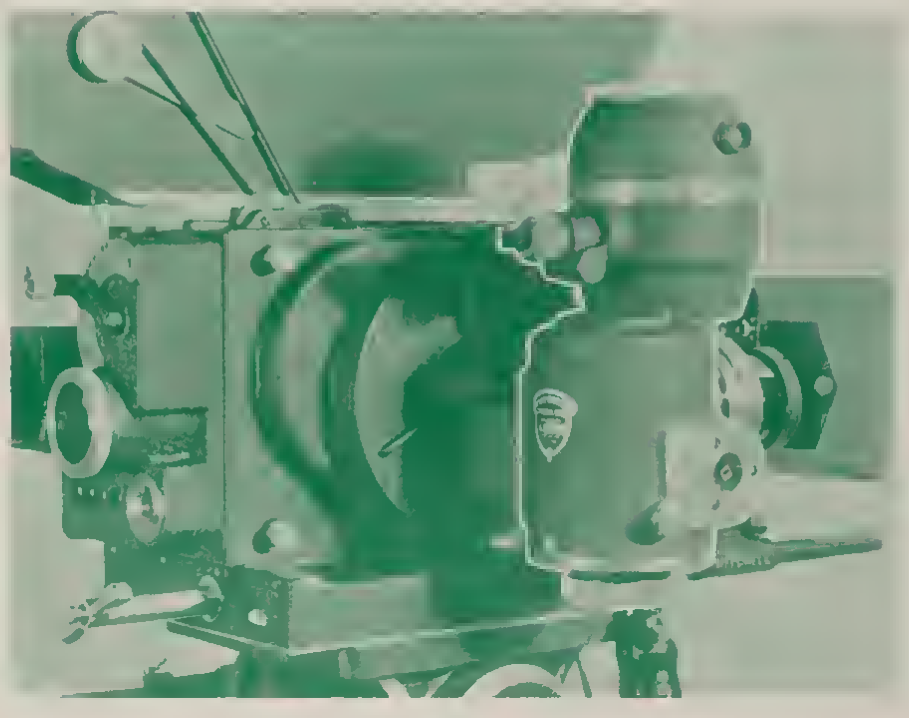

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